AD_____

Award Number: DAMD17-00-1-0711

TITLE: International Rehabilitation Network

PRINCIPAL INVESTIGATOR: William Kennedy Smith, M.D.

CONTRACTING ORGANIZATION: Center for International Rehabilitation
Chicago, Illinois 60611

REPORT DATE: October 2002

TYPE OF REPORT: Annual

PREPARED FOR: U.S. Army Medical Research and Materiel Command
Fort Detrick, Maryland 21702-5012

DISTRIBUTION STATEMENT: Approved for Public Release;
Distribution Unlimited

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 074-0188

1. AGENCY USE ONLY (Leave blank)	2. REPORT DATE	3. REPORT TYPE AND DATES COVERED
	October 2002	Annual (29 Sep 01 - 28 Sep 02)

4. TITLE AND SUBTITLE
International Rehabilitation Network

5. FUNDING NUMBERS
DAMD17-00-1-0711

6. AUTHOR(S):
William Kennedy Smith, M.D.

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)
Center for International Rehabilitation
Chicago, Illinois 60611

8. PERFORMING ORGANIZATION REPORT NUMBER

9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES)
U.S. Army Medical Research and Materiel Command
Fort Detrick, Maryland 21702-5012

10. SPONSORING / MONITORING AGENCY REPORT NUMBER

11. SUPPLEMENTARY NOTES

12a. DISTRIBUTION / AVAILABILITY STATEMENT
Approved for Public Release; Distribution Unlimited

12b. DISTRIBUTION CODE

13. Abstract ***(Maximum 200 Words)*** *(abstract should contain no proprietary or confidential information)*

The International Rehabilitation Network's goal is to improve the quality of services for land mine survivors and other amputees through the dissemination of educational programs and electronic services to rehabilitation professionals. This has been accomplished through the use of information telecommunications technologies and computer-based training. In Year 2, the CIR completed a 10-month distance learning program in Lower Extremity Prosthetics. The curriculum is delivered over WebCT courseware and was made available to 23 students in 11 centers in Guatemala, Nicaragua and El Salvador. The educational material is supplemented by interactive hybrid CD-ROMs that adjust for low bandwidth Internet connections. In addition, the CIR established a field office in Bosnia and completed a Balkans regional training assessment. New curriculum content in Upper Extremity Prosthetics was also completed. The CIR integrated WebCT's distance learning platform with online database capabilities that enable remote network members to perform data management functions through a secure login system. The types of data managed by the CIR are 1) regional rehabilitation center data and 2) outcome measurement data.

14. SUBJECT TERMS
distance learning, amputees, rehabilitation professionals, database

15. NUMBER OF PAGES
100

16. PRICE CODE

17. SECURITY CLASSIFICATION OF REPORT	18. SECURITY CLASSIFICATION OF THIS PAGE	19. SECURITY CLASSIFICATION OF ABSTRACT	20. LIMITATION OF ABSTRACT
Unclassified	Unclassified	Unclassified	Unlimited

Center for International Rehabilitation
Annual Report to the Department of Defense
#DAMD17-00-1-0711

Table of Contents

INTRODUCTION

The contractor for the International Rehabilitation Network (IRN) is the Center for International Rehabilitation (CIR). William K. Smith, MD, is the Principal Investigator. The goal of the IRN is to improve the quality of services for land mine survivors and other amputees through the dissemination of educational programs and electronic services to rehabilitation professionals. This dissemination is accomplished through the innovative use of information and telecommunications technologies and computer-based training. The IRN links the CIR and its Rehabilitation Engineering Research Center and other institutions of excellence in prosthetics/orthotics and rehabilitation with service providers in low-income countries.

BODY

Accomplishments associated with the approved Statement of Work (SOW):

SOW #1: *To date, a Web-based curriculum in Transtibial prosthetics and a bandwidth friendly course delivery platform have been developed to provide continuing education for those providing rehabilitation services to land mine survivors and other amputees. During the next 12 months, the curriculum will be expanded to include Transfemoral and Upper Extremity Prosthetics materials, and content will be adapted to the cultural norms of the new regions in which the CIR will be active. In addition, the platform will be refined, its communications tools and functionality improved, and database and teleconsultation functions integrated into the portal. Data from the pilot study will be analyzed to gauge the effectiveness of the platform and guide future development.*

Background

The CIR Distance Learning program is a continuing education program for professionals in rehabilitation. It incorporates the following features:

- Blended use of multiple learning platforms (textbooks, computers, networks, and in-person instruction) to support rigorous, active learning through workshops, projects, labs, tutorial dialogues, lectures, simulations & models.
- Refinement and expansion of content by instructional experts through an advisory panel.
- Use of communication tools such as chat rooms, bulletin boards & conferencing to facilitate interactivity and dialogue.
- Use of trainees to develop content for the project that is transferred to our digital library and the Web—for use both internally and by other Center for International Rehabilitation Network (CIRN) facilities.
- Real-time interactivity and individualized instruction through the utilization of on-line mentors.

The CIR has adapted course content from Northwestern University Prosthetics and Orthotics Center (NUPOC). Each module-set has 10-12 modules covering two areas: (a)

academic training, and (b) clinical/practical training. Each module within a set reviews a specific step or sequence, and can be used interchangeably to create other short courses or degree programs. The academic portion requires approximately 40 days (320 hours) of didactic training and the practical portion includes 48 hours of supervised clinical workshops and 32 days (256 hours) of unsupervised hands-on clinical practical work.

The theoretical portion of the curriculum utilizes both traditional and Internet based teaching methods. Students are expected to finish each module within a given time period. The activities included under each module include pre-tests, weekly on-line case presentations, on-line conferences, assignments, and "chat room" discussions with other classmates, prosthetic professionals and instructors. At the end of the module each student must pass a written test with a minimum of 70% in order to move to the next module.

Project Update

Curriculum Development

In coordination with Northwestern University Prosthetic Orthotic Center (NUPOC), six bilingual (Spanish and English) multimedia module-sets have been developed and disseminated in the Latin American region. These module-sets are listed below. The Transtibial Module-set has been translated into Bosnian and cultural adaptations to its content are being made for its use in the Balkan region.

Sepp Heim, President of the International Society of Prosthetics and Orthotics (ISPO), has endorsed CIR's distance learning program by agreeing to Chair the Education Panel of the IRN Advisory Council, and provide advice in the area of program development and educational content. Counsel provided to date by Mr. Heim is summarized under SOW #3.

A three-year degree curriculum in prosthetics/orthotics has been developed by the CIR and contacts are being made with universities in Latin America and Southeast Asia to discuss partnership opportunities. Further details on the CIR P & O degree program are provided below under SOW #2. A copy of the curriculum is provided in Appendix C.

A list of the modules completed to date follows:

1. Computer Training and WebCT Tutorial (English and Spanish)

2. Transtibial Module-Set (English, Spanish and Bosnian)

Module I	Basic Below the Knee Anatomy
Module II	Patient Prosthetic Evaluation
Module III	Measuring Techniques
Module IV	Casting Techniques
Module V	Modification of Plaster Mold

Module VI	Fabrication of Soft Liner
Module VII	Materials Used in Plastic Lamination
Module VIII	Lay Up and Plastic Lamination
Module IX	Socket Fabrication and Bench Alignment
Module X	Suspension Systems
Module XI	Static Alignment
Module XII	Dynamic Alignment

3. Transfemoral Module-Set (English and Spanish)

Module I	Basic Below the Knee Anatomy
Module II	Patient Prosthetic Evaluation
Module III	Measuring Techniques
Module IV	Casting Techniques
Module V	Modification of Plaster Mold
Module VI	Fabrication of Soft Liner
Module VII	Materials Used in Plastic Lamination
Module VIII	Lay Up and Plastic Lamination
Module IX	Socket Fabrication and Bench Alignment
Module X	Suspension Systems
Module XI	Static Alignment
Module XII	Dynamic Alignment

4. Transradial Module-Set (English and Spanish)

Module I	Basic Upper Extremity Anatomy
Module II	Prosthetic Components and Selection Criteria
Module III	Patient Prosthetic Evaluation
Module IV	Flexible Hinges: Principles, Measurements & Casting Techniques
Module V	Flexible Hinges: Cast Modification
Module VI	Flexible Hinges: Socket Fabrication
Module VII	Materials Used in Plastic Lamination
Module VIII	Lay Up and Plastic Lamination
Module IX	Fabrication of the Forearm Extension
Module X	Harnessing the Flexible Hinges

5. Outcome Measures Module-Set (English and Spanish)

Procedures Manual
- Description of the Program
- Data Collection Forms
- Research Coordinator Scope of Work
- Monitoring

Patient Consent Forms and Procedures
Training Module
Data Collection Schema

CIR User's Survey Tracking Sheet
Outcome Measures Monitoring Forms
- Registration and Demographics
- Lower Extremity Functional Status
- Health Related Quality of Life
- Lower Extremity Prosthetic Initial Assessment
- Lower Extremity Prosthetic Progress Note
- Follow-up Evaluation of Clinic Services

6. CIR Casting System for Transtibial Prosthetic Socket (Draft, English and Spanish)

Module I	Basic Below the Knee Anatomy
Module II	Patient Prosthetic Evaluation
Module III	Measuring Techniques
Model IV	Management of the Residual Limb
Module V	Removable Rigid Dressing
Module VI	CIR Casting Station
Module VII	Preparation of the Residual Limb
Module VIII	Making Negative/Test Model
Module IX	Making Positive Sand Model
Module X	Fabrication of Soft Liner
Module XI	Materials Used in Plastic Lamination
Module XII	Lay Up and Plastic Lamination
Module XIII	Socket Fabrication and Bench Alignment
Module XIV	Suspension Systems
Module XV	Static Alignment
Module XVI	Dynamic Alignment

Platform Development

The CIR has established an integrated, secure, web-based platform that facilitates distance learning, data collection, storage and reporting and communication among a number of clinics and hospitals in the Center for International Rehabilitation Network (CIRN).

Platform Design
Materials are mounted on a Dell brand Linux web server. On the broadcast end at the CIR, the server is connected to the Northwestern University backbone via a wireless bridge providing approximately 2 megabits/second of bandwidth. Course materials are delivered using WebCT courseware version 3.1. On the receiving end, all students are required to have access to a PC with a minimum of 400 megahertz processor, CD-ROM, and at minimum 33K modem Internet access. Mandatory software on the student side consists of an Internet browser and word processing package. All software used by students is commercially available off-the-shelf and no custom or proprietary software has been installed at the centers participating in the program.

The platform has two primary functions, distance learning and data management.

1) Distance Learning

As mentioned above, we currently are using WebCT distance learning courseware, designed by WebCT, the world's leading provider of e-Learning solutions for higher education, and hybrid CD ROMS to deliver course materials. WebCT is a courseware management and delivery software that stores the courses and communication tools on a web server. WebCT courseware is being used in 81 countries and more than 2,500 institutions and provides distance-learning education to more than 2 million students per year. Students are able to simultaneously interact with other participants through a chat room that allows for limited, synchronous, interactive discussion and consultation with the CIR and our on-line faculty. The distance learning platform allows us to accommodate the following factors:

- Constantly evolving content
- Geographically dispersed audience
- Severe band-width limitations in low-income countries
- Scalability that justifies significant development and implementation costs
- Need for individualized training opportunities prompted by a wide range of trainee mastery levels
- Need for interaction and/or high-fidelity simulation

As an accommodation to audience members having low-bandwidth capabilities, students are also able to access module-sets via hybrid CD-ROM, which interacts with the web-based distance education courseware to facilitate delivery of video images depicting selected critical aspects of the patient evaluation and prosthetic manufacturing process.

Additionally, the CIR has initiated a cooperative agreement with WebCT to develop the first ever Serbo-Croatian (Bosnian dialect) language plug-in for WebCT's Campus Edition 3.8. This plug-in will enable the CIR to deliver WebCT-based content using a Serbo-Croatian language interface for navigation and help files. The plug-in will be made available to all users of the Web-CT platform, enabling other WebCT users to leverage this regional capability of the WebCT platform as an additional benefit of this activity.

2) Data Management: Data collection, Storage and Reporting

The CIR has integrated secure data entry and reporting functions into its web-based platform. Two distinct categories of data are stored and reported on the network:

(a) The network collects, stores and reports aggregate clinical data on the outcomes of prosthetic services rendered to land mine survivors and other amputees by rehabilitation centers in the network. An integrated login framework has been established that strictly limits user access. Confidentiality of the clinical data is assured during transmission by strong encryption (128-bit SSL) and database security is assured by an industry-standard firewall. The outcomes data will be used to assess the impact of rehabilitation services at participating centers as well as the impact of

CIR education and training on the quality of these services. See Appendix I for a copy of the data collection instruments, and see SOW #5 for further details on this project.

(b) In addition, the CIR collects, stores and reports on data pertaining to rehabilitation centers in the network. This database, or directory, is available online for reference by members of the network as well as land mine survivors, other amputees, and the general public. Searchable queries include location and type of services offered by the centers, and center administrators will soon be able to edit and update information pertaining to each center online. During the last year the CIR has been working with local non-governmental organizations (NGOs) and governmental organizations in Latin America to update the directory. Plans to expand the directory are also underway. A "Survey of Rehabilitation Centers" developed by the CIR has been distributed through 30 regional offices of the Pan American Health Organization (PAHO).

SOW # 2: *Training in lower extremity prosthetics in Central America will continue. The CIR will work with local universities to develop a degree program in prosthetics and orthotics. The CIR will also work with the University of Ljubljana in Slovenia to conduct research in adapting CIR educational materials to the University's educational program.*

Background

The CIR's Lower Extremity Distance Learning curriculum is designed to provide training to prosthetic technicians working at existing prosthetic centers in low-income, post-conflict regions. These technicians have had limited access to training, and for various reasons, have been unable to access a formal university prosthetic and orthotic education program.

Project Update

Central America

The CIR established relationships with service providers, universities and consumers with disabilities in Central America to assist them in providing technical and administrative support, developing and strengthening their skills, helping in the development of programs, and transferring appropriate technology. In July 2002, the CIR completed a 10-month pilot continuing education course in lower extremity prosthetics, training 23 students from 11 service provider centers in Guatemala, Nicaragua, and El Salvador. (A list of students and their affiliated centers is in Appendix A.) These clinics treat over 3,600 prosthetic/orthotic patients per year, of whom over 1,000 were injured as a result of conflict.

It is expected that these students will be enrolled in the CIR's continuing education course in upper extremity prosthetics, to begin by the end of 2002. In addition, the CIR is

preparing to expand the program to Honduras, and has identified three service providers who have expressed interested in participating in the program. The CIR and the Pan American Health Organization (PAHO) are discussing these arrangements with representatives of the Honduran Ministry of Health, the Honduran Telethon Foundation and Handicap International.

A detailed description of the CIR's distance learning program was presented at the February 2002 "Prosthetics and Orthotics Training Institutes Non-Industrial Countries", Conference in El Salvador. Over 50 participants attended this workshop, including members of the ISPO Executive Board. The presentation generated an enthusiastic response from the participants.

Degree Programs

In April 2002, the CIR and Pan American Health Organization (PAHO) issued a request for proposals (RFP) to fifteen leading educational institutions in the Latin American region. A copy of the RFP is provided in Appendix B. The purpose of this RFP is to identify regional partners that will enable the CIR to expand the Distance Learning Program to ensure the quality of rehabilitation service for landmine survivors and other amputees in Latin America. These regional educational institutions will work with the CIR to develop or expand a degree program in Prosthetics and Orthotics in Latin America that leverages CIR educational content and expertise. In October 2002, the CIR will be conducting site visits to universities in Ecuador, Argentina and Mexico. Proposals will be evaluated based on the following criteria:

1. Technical description of the program
- Applications should reflect a strong understanding of CIR's program and should detail the methodology of how the organization will reach its proposed goals
- Previous experience in the area of curriculum development
- Previous experience in the area of information technologies
- The organization must have the required technical faculty and professional staff to carry out the program
- Experience in the development of prosthetic & orthotic education content

2. Administrative aspects
- Demonstrated capacity in the areas of administration and financial management
- Accredited educational institutions legally established in Latin America
- Demonstrated capacity in the area of project planning and development

3. Cost
- The economic aspects of the proposal will be evaluated with respect to their justification and affordability compared to the proposed activities

The CIR has also developed a three-year curriculum for a degree in prosthetics and orthotics. A copy of this curriculum is provided in Appendix C. An international consortium of ISPO-recognized educational centers is being created to jointly develop

distance learning content in prosthetics and orthotics for use in a degree program as well as other educational activities by consortium members. As an initial step towards the creation of the consortium, the CIR is concluding an agreement with the University of New South Wales in Australia that identifies educational content developed by each party for use, on a royalty-free, non-exclusive basis, by each party in their respective educational programs. Once finalized, this agreement will serve as a model for additional content sharing agreements with consortium members.

Balkan Region

The CIR has also established a regional hub in Bosnia to provide training to technicians at rehabilitation centers in Bosnia. The educational program offered in the Balkans will be designed to upgrade the technical skills of professionals working in prosthetics/orthotics centers in the region.

Today, Bosnia and Kosovo have the most severe land mine problem in Europe. Because of the estimated 1 million land mines that are indiscriminately placed throughout Bosnia, and the massive number of additional mines located in Kosovo, the number of amputees in this region of Southeastern Europe is predicted to rise over the next several years.[1] The U.S. State Department reports the number of mine related casualties in Bosnia between 1996 and 2001, to be over 1,500[2]. International Committee of the Red Cross (ICRC) estimates the number of casualties in Kosovo between 1999 and 2001 at 527. Albania's injured are estimated at around 250. These injuries are a result of unexploded ordnances and cluster bomb munitions.

From June 3 – July 3, 2002 the CIR conducted a program assessment mission to the Balkans as the first step toward the expansion of the Center for International Rehabilitation Network to the region. Based on this assessment, a group of centers in Bosnia was selected to participate in network activities including distance learning, technology development, data collection and reporting and clinical consultation. These centers in Bosnia were selected as the logical focal point in the initiation of the network for the following reasons:

1. No formal training program of any kind exists in Bosnia, where the numbers of landmine victims are among the highest.
2. Bosnian prosthetic centers selected upgrade training as the program that would have greatest immediate impact on the quality of their clinical services.
3. The training program piloted in Central America can be cost effectively adapted and implemented in Bosnia.
4. The Gradina Prosthetic Center in Tuzla agreed to contribute office and work space to the program in order to facilitate CIRN conferences and clinical workshops.

[1] Standing Committee of Experts on Victim Assistance, Bosnia and Herzegovina Country Report, Geneva, September 15-18, 1999

[2] U.S. State Department, Hidden Killers, 1998 and ICRC, Mine Incidence in South Eastern Europe, 2002

In Bosnia today, prosthetists are trained on the job and are the only members of the amputee health care team that have no formal training (nurses and therapists graduate from specialized technical high schools while psychologists and doctors have university degrees and must complete specialized residencies.) Most of the prosthetists and orthotists have only completed primary school and some have received training in technical schools in unrelated disciplines (shoe manufacturing or TV repair, for example).

The CIR is currently adapting the Lower Extremity course content into Bosnian-language module-sets. A Regional Administrator has been hired and is based in Tuzla, Bosnia. Up to 12 regional centers are being evaluated for participation in the inaugural pilot of the program in Bosnia. The CIR expects up to 10 centers and 30 students to participate in the pilot continuing education program in Bosnia in early 2003.

Discussions with the IR – RS in Ljubljana, a possible site for a regional hub, are ongoing as the CIR works to create a university degree program that can be introduced to the region. Dr. Smith will be presenting a paper on the distance learning program at the International Society of Prosthetics and Orthotics meeting in Dubrovnik, Croatia the week of October 21st. The conference will be an important consensus building activity with program partners based in the Balkans. CIR staff from Chicago and Bosnia will meet to discuss the strategic direction of the continuing education program as well as network with professors, doctors and prosthetists from the region.

Regional Clinical Activities

Plans for clinical activities, including field testing of the Dilatancy Casting System, are being scheduled for this fall and winter.

SOW #3: *Data from the projects will be used to examine the feasibility of (i) the use of a commercially-available Web-based courseware coupled with hybrid CD-ROMs for the delivery of continuing prosthetics education and (ii) the ability of Plain Old Telephone Service (POTS), ISDN and wireless technologies and devices to support continuing education to those providing services to landmine survivors and other war-wounded.*

Project Update

The CIR has completed a 10-month pilot of the Distance Learning program in Central America, in which 23 professionals from 11 centers were enrolled, covering the Transtibial and Transfemoral module-sets. The long-term impact of education and training on the quality of clinical care is difficult to measure. To address this, the CIR intends to use data on prosthetic outcomes collected at centers that participate in the education program to assess the impact of the education program on service provision. Further information on the outcomes database is provided under SOW #5.

The CIR is currently evaluating the pilot by assessing 4 areas: 1) user (students and mentors) evaluation/performance, 2) delivery platform, 3) instructional design, and 4) cost-effectiveness. Student evaluation and performance data includes information gathered through student and mentor surveys, the WebCT platform administrative data and webtrend analysis, student performance measures and social network analyses.

Student Evaluations

At the conclusion of the pilot program, students were asked to rate the course on the following categories (Poor =1; Excellent = 5). Overall, the highest and most consistent ratings were given for the performance of the Instructor (CIR staff person Hector Casanova), the organization and structure of the course, and the course content. The lower ratings for the mentor performance identify this as an area for improvement. The results were the following:

Student Ratings	Average student rating
Instructor	4.70
Your Mentor	2.70
Technical Support	3.52
Organization of the course	4.22
Content	4.25
Online chat	3.83

Students were also asked to rate each statement (Strongly Disagree = 1; Strongly Agree = 5). Overall, students indicated the greatest satisfaction with understanding the expectations of the course, technical support and use of the computer.

Student Response to Statements	Average Student Rating
The expectations were clearly stated for the Transtibial/Transfemoral course.	4.48
I was pleased with my interactions with my mentor.	3.30
I received adequate support from the regional technical support personnel.	4.00
I was comfortable using the computer for this course.	4.17
I was able to spend as much time as needed using the computer for this course.	3.96

Mentor Evaluations

In addition, the mentors were asked to rate the course in the following categories (Poor =1; Excellent = 5). The mentors gave the highest ratings for technical support and the design of the educational materials. The instructor and educational content received high marks as well. The results are summarized below:

Mentor Ratings	Average student rating
Instructor	4.33
Technical Support	4.67
Organization of the course	4.00
Content	4.33
Design layout of online materials	4.67
Online chat	3.33

The mentors were also asked to respond to the following statements. In general, mentor responses indicated a high comfort level with computer use, time with the students and technical support.

Mentor Response to Statements	Average Student Rating
The amount of work for mentors was… (Far Too Light = 1; Far Too Heavy = 5)	2.33
The mentor's role with regard to students was clearly defined. (Strongly Disagree = 1; Strongly Agree = 5):	3.33
Mentors were given adequate directions before and during the courses.	4.00
I was pleased with my interactions with the instructor.	4.33
I received adequate support from the regional technical support personnel.	4.67
I was comfortable using the computer for this course.	5.00
I was able to spend as much time as needed with students for this course.	5.00

The completed course evaluation results from students and mentors are included in Appendix F of this report, including individual student and mentor responses to open ended questions such as the following:

- What did you learn in this course that was most helpful?
- To improve this course, what areas of this course were most confusing or which topics would you like more information about?
- What changes would you make for the next course?
- Additional comments and suggestions

Student Performance

Students participating in the pilot distance learning course were evaluated using the following:

1. Written examinations conducted at the beginning and at the completion of the course
2. Online quizzes taken by each student following his/her completion of each online module. A score of 70% or better was required for students to proceed to the next module.
3. Case presentations, which were group projects submitted once during the course by each participating center
4. Technical briefs (one prepared by each student during the course)
5. Individual performance in hands-on practical workshops
6. Individual participation in chat room and bulletin board discussions

As of the end of the grant reporting term (September 28, 2002), most students had completed all requirements of the pilot course. Three students were completing their final technical briefs. Final exam scores from the Transfemoral section of the course had yet to be reported for seven students. Three students also had written and/or practical work to be completed from the Transtibial section of the course.

The average student performance scores on the practical examinations and modular quizzes of the Lower Extremity course were as follows:

Practical Examinations	**Average Student score**	**Standard Deviation**
Transtibial section	85.2	7.0
Transfemoral section	75.5	4.4
Module Quizzes	**Average Student score**	**Standard Deviation**
Transtibial section	89.6	5.4
Transfemoral section	89.3	5.1

Graphs of student performance on the entry exams (not for grade) and exit exams for the Transtibial and Transfemoral sections of the course are available in Appendix D of this document. Student activity checklists associated with the practical examinations of the Transtibial and Transradial sections of the course have been included as Appendix E.

Tracking Tools

Built into the WebCT platform is information that can be used to track student usage of course content and resources. This data is available to personnel with authorized login permission such as designers, help desk staff and the on-line mentors. For the Lower Extremity Prosthetics course the following aggregate usage statistics were gathered:

WebCT tracking variable	**Result**
Average visitor session length:	23 minutes, 11 seconds
Average total number of hits per student:	2,987
Average total number of different pages visited:	771
Average homepage visits:	297
Average content page visits:	2112

Average visits to discussion read pages:	97
Average number of posted original discussion pages:	2.00
Average number of posted reply discussion pages:	2.38
Average number of glossary views:	21.8

The most frequently viewed modules of the Lower Extremity Prosthetics course are listed below by the number of visitor sessions. Course modules not listed below were visited 70 times or fewer.

Module	**Number of visitor sessions**
Anatomy	140
Bench	125
Dynamic Alignment	119
Evaluation	109
Modification	107
Casting	93
Static Alignment	80
Suspension	79
Lamination	78
Measuring	78
All other modules	70 or fewer

Additionally, webtrend reports on usage of the CIR Network as a whole are generated each month. The following summary statistics were generated for the period June 2001 to September 2002:

Hits	Entire Site (successful)	699,296
	Average Per Day	1,475
	Home Page	7,168
Page Views	Page Views (impressions)	396,241
	Average Per Day	835
	Document Views	126,529
Visitor Sessions	Visitor Sessions	10,271
	Average Per Day	21
	Average Visitor Session Length	22:34
	International Visitor Sessions	1.54%
	Visitor Sessions of Unknown Origin	89.19%
	Visitor Sessions from United States	9.25%
Visitors	Total Visitors (Unique ISP Address)	3,121
	Visitors Who Visited Once	1,933
	Visitors Who Visited More Than Once	1,188

Social Network Survey

By delivering continuing education to geographically dispersed rehabilitation centers through the CIRN, the CIR aims to foster communication and professional connections ("social networks") among program participants. In Summer 2002, the CIR conducted an assessment of the social networks formed through its education program in Nicaragua, El Salvador and Guatemala.

Thirty-three participants (including CIR students, mentors and staff) submitted survey responses that tabulated their communication history with other network members. Respondents worked individually. Only responses in which both parties reported sharing a communication history were included in this analysis as a "connection" between the parties.

An analysis of social network data indicates high levels of communication and collaboration among network members as a result of computer-based exchanges. These data also suggest that connectedness amongst individual members of the network is highly variable, with a mean of more than 7 connections per individual and a standard deviation of nearly 6. Communication pathways between CIR staff members and many network individuals were particularly dense, while certain participants appeared to remain at the periphery of the network. More details on the study are provided in a report in Appendix G.

Delivery Platform

The current delivery platform (WebCT 3.1) is an off-the-shelf commercially available solution representing a public/private partnership between the CIR and WebCT. Benefits of this platform over a custom delivery platform include affordability, ease with which it can be updated, and multi-language plug-ins (for dissemination to Central America and the Balkan region).

The CIR is preparing to migrate to WebCT Campus Edition 3.8 in the next grant year. Benefits of this version include Section 508 compliance for accessibility to the widest audience, drag-and-drop content acquisition, management of cross-listed courses, multi-language capabilities (including support for Unicode), support for failover, and randomized display of answers to multiple-choice questions for enhanced quiz security.

Some of the ongoing challenges for use of the WebCT platform include the need for users to be online while they are engaging course content or the various communications tools (e.g., online chat, discussion boards) and the lack of availability of WebCT email outside the login framework of online courses.

Content and Instruction

The CIR has engaged Mr. Sepp Heim, President of the International Prosthetics and Orthotics Society (ISPO) as the chair of the CIR's Advisory Panel on Educational

Content. Mr. Heim will provide insight and guidance on the content to be incorporated in the CIR coursework and how this content is delivered to the students in order to meet international standards.

To date, Mr. Heim has completed a review of the Transtibial module-set of the Lower Extremity Prosthetics course. Mr. Heim's report was complimentary on the structure and lay-out of the Transtibial module-set. He emphasized the importance of standardized workshops to ensure that all students are able to reach a specified quality or skill level as required by the instructors. Mr. Heim suggested topics for future modules on lower limb prosthetics, including content on lower limb amputations like Symes, Pyrogoff, partial foot amputation, through knee, and hip disarticulation.

Cost-effectiveness

Based on cost data generated from the 10-month distance learning pilot program in Central America, the CIR has developed a costing model to estimate the costs of adding more students to the program in Central America as well as adding new regions to the program. The costing model, which will be further refined in the next grant year with data from the Balkans region, will assist project staff to identify major cost drivers and potential sources of cost savings, forecast project economies of scale and assess the costs and benefits of project expansion.

The annual operating costs of a regional continuing education program were estimated. Major cost components in the model include:

- Educational content adaptation (translation and cultural adaptation)
- Computers, Internet connections and technical assistance for participating centers
- Clinical workshops (hands-on student evaluations, demonstrations, final examinations)
- Management of the regional network, Regional Resource Directory and Outcomes Measures databases

Initial analysis suggests that 100 technicians per region per year can be trained at a direct program cost (not including overhead and content development costs) of about $2,000 per technician, or about $2.50 per student-hour of training. The CIR will continue to identify cost savings to reduce costs further, validate the cost model with additional data, and assess the cost-effectiveness of the distance education program versus traditional methods of instruction.

In addition, the CIR will assess regional university-based P&O degree programs as potential cost-effective alternatives to the continuing education program model. As detailed under SOW #2, the CIR is currently developing such a degree program with universities in Latin America and Asia. Potential cost savings from a degree program versus a continuing education program include the following:

- Elimination or university subsidization of computer, Internet connection and technical support costs
- Elimination or university subsidization of field office expenses

- Reduced regional staffing needs
- Elimination of regional network set-up and maintenance expenses

SOW #4: *Telemedicine and teleconsultation services and technical support will be provided to land mine service providers enrolled in the International Rehabilitation Network in Central America and the Balkans. Telemedicine/teleconsultation support for the program will be tested through the expanded program.*

The selection process for the final CIRN user version of the teleconsultation services software program is near completion. From the wide variety of options, three software packages are under final consideration. Telecollaboration Online Database (TOLD) is a web-based tool in use at the Medical Informatics and Technology Applications Consortium (MediTAC). TOLD serves as an electronic medical record, an interactive tool for education and distance learning, and as a clinical consultation platform and was originally developed as a graphical user interface to support the Spacebridge to Russia. The other two software solutions options under consideration are Scarab and Jira, both of which are customizable issue tracking systems offering database integration and affording secure dynamic communications between consultants and those technicians or health care workers receiving consultation in the field.

The CIR expects a teleconsultation system to be functional for testing by 2003. Several experts in the medical field have offered to volunteer clinical consultation service time for the teleconsultation service within the CIR Network. Five clinicians in Columbia have offered to serve as consultants in coordination with the Pan American Health Organization (PAHO). A survey addressing needs analyses of clinical teleconsultation services has been conducted through PAHO and a letter from PAHO supporting the provision of teleconsultation services has been provided to the CIR.

SOW #5: *The CIR will implement an information collection system on prosthetic outcomes that may be used to assess the effectiveness of orthopedic programs for land mine survivors. The CIR will use this information in future assessments of its programs and in the design of models of sustainable service delivery for conflict-affected regions.*

Background

There are great challenges involved in providing services to people with land mine injuries in developing countries. The availability of medical treatment and rehabilitation services varies by region and may be entirely unavailable in some localities. The goal of rehabilitation, including clinical prosthetic and orthotic services, is to assist patients in achieving the highest possible level of functional independence, thereby reducing their disability and assisting with social reintegration. As part of the overall rehabilitation efforts, it is of the utmost importance to promptly identify and replicate the technologies and strategies that most effectively realize this goal. Similarly, less successful approaches need to be identified to prohibit them from absorbing inappropriate amounts of resources. If systematic rehabilitation programs are to be developed and replicated,

more recognized, standardized methods for evaluating outcomes are needed. While instruments exist that measure these aspects of disablement, they may not be appropriate for use in developing countries.

The purpose of this project is to support the development of outcome measures that may be used by service providers and funders working in developing countries to adequately assess whether the rehabilitation programs for land mine survivors are accomplishing their goals. Furthermore, the outcome measures will be used to assess the impact of CIR programs, including its education and training programs, on the quality of services provided by network members.

Under this project, uniform measures have been identified that are relevant to the rehabilitation of adults and children in different settings. Information collected includes: 1) patient characteristics and degree of impairment; 2) functional and health status data that can be used to monitor improvement subsequent to treatment; 3) descriptions of the treatment and devices provided that can be used to evaluate the quality of these services; and 4) information relating to social reintegration.

As part of the instrument development process, interval-level measures of impairment, disability, community integration, life satisfaction, health status, employability and prosthetic equipment quality and durability, will be calibrated using a measurement technique called Rasch measurement (Rasch, 1960; Wright & Stone, 1979; Wright & Masters, 1982). A limitation of existing instruments is their ordinal nature that reduces the opportunity for parametric statistical comparisons and limits the utility of the scales.

To identify the characteristics of patients who achieve the best outcomes, multiple linear regression will be used. The predictors will consist of patient demographic characteristics, including type and severity of injury and status at admission to rehabilitation, in terms of impairment and disability. The outcomes to be examined consist of: decline in impairment, increased independence, greater community integration, life satisfaction, health status, and employability. A similar analysis will be conducted to identify the characteristics of prosthetic equipment that result in the best outcomes in terms of greater durability.

The project consists of three phases: 1) instrument development; 2) instrument evaluation; and 3) outcomes assessment. In the first phase, data on the characteristics of patients with various impairments will be collected from the existing literature and collaboration with task force clinicians; new items will be field tested; and data from the field test will be analyzed. In the second phase, the new instruments will be field-tested and the psychometric characteristics examined. Prospective data collection is scheduled after instruments are developed; and outcomes analyses, report writing and results dissemination will follow.

Project Update

Outcomes data instruments have been developed and are now being field tested in conjunction with two rehabilitation centers in Central America.

Instrument Development

The outcomes data instruments consist of a 20-item lower extremity functional assessment tool, a 23-item quality of life survey and a 21-item patient satisfaction questionnaire. Copies of the instruments are provided in Appendix H. Clinician and administrator input were integral to the development of the outcomes instrument, and were solicited through workshops held in Guatemala and Slovenia. The project was well received by attendees, and many were enthusiastic about the impact that documentation and analysis of outcome data could have on program improvement and future funding sources. During the workshops attendees engaged in open discussions about the unique cultural, economic and geographic factors affecting prosthetic and rehabilitation services for landmine survivors.

Suggestions regarding the content of the outcomes database have also been solicited from other service providers from around the world. Dr. Wanume Kale of Uganda and Dr. Helena Berger of Slovenia have both evaluated the tool for cultural and functional appropriateness. In July 2001, this project was presented at the triennial meeting of the International Society for Prosthetics and Orthotics (ISPO) in Glasgow, Scotland. Also, meetings were held with several international collaborators and other interested parties with the goal of furthering the discussion on the vital role outcome measurements play in program evaluation and allocation of resources.

Data Collection and Recording

As mentioned previously, the project is designed so that data is collected at different intervals of the client's treatment, and measures impairment, disability, community integration, life satisfaction, health status, employability and prosthetic equipment quality and durability. After giving informed consent, each client is assigned a confidential tracking number. Research coordinators at the participating clinics collect data from the clients as required by the outcomes instruments. The coordinators record and input the data by client tracking number in the CIR database via a secure CIR web portal (details on the database infrastructure and security are provided above under SOW #1). The outcomes data instruments consist of the following forms (copies of which are provided in the Appendix H):

1. Registration and Demographics
This one-page form covers information on the client's employment status, educational level, current living situation, and general health history. The information on this form is obtained at the time of the client's first visit to the clinic.

2. Lower Extremity Functional Status
This one-page form includes questions on the client's current ability to perform a variety of lower extremity activities. This form is to be completed by the client at the time of their first visit to the clinic and again at a 30-day follow-up visit. Functional data will be collected one final time at a 3 - 6 month follow-up visit.

3. Health Related Quality Of Life
This two-page form measures a client's current quality of life and sense of well-being. As with Functional Status, this form is to be filled out at the time of the client's first visit to the clinic and again at the 30-day follow-up visit. We will collect this quality of life data one final time at a 3 - 6 month follow-up visit.

4. Lower Extremity Prosthetic Initial Assessment
The Research Coordinator working with the client's prosthetist completes this two-page form at the time of the client's initial visit to the clinic. This form establishes the client's health history and need for a device, based on functional levels, physical status, and treatment goals.

5. Lower Extremity Prosthetics Progress Note
The Research Coordinator completes this form every time the client visits the clinic until the time of device delivery, or the first routine follow-up visit, whichever is later. For research purposes, the time period from initial visit to device delivery or follow-up will be considered the client's duration of care. This two-page form provides a way of tracking a client's functional status over the course of an episode of care. The Progress Note, in combination with the other data elements such as demographics, health history, and client reported functional status and quality of life, will enable us to evaluate treatment modalities and functional gain for a particular episode of care.

6. Follow-Up Evaluation of Clinic Services
Clients will be scheduled for follow-up visits at 30 days and 3 - 6 months after delivery of their prosthesis. This two-page form provides a means for tracking client satisfaction with their device and the services they received at the clinic.

Field Trials in Central America

The CIR and the Rehabilitation Institute of Chicago (RIC) are currently conducting field-testing of the instruments at the Telethon Foundation Pro-Rehabilitation (FUNTER) and at the Armed Forces Rehabilitation Center (CERPROFA) clinics in El Salvador. Copies of the agreements with these clinics covering these activities are provided under Appendix J. Research coordinators at these clinics received training from the CIR on the research protocol and remote electronic entry of the patient data, and in July 2002 started to collect data from consenting patients. To date (September 2002), data on 29 patients have been collected and entered into the CIR database. The CIR expects to collect data on 100 patients by Summer 2003. The field trials are providing necessary data to complete the refinement of the instruments and also to evaluate their validity and reliability when used with land mine affected populations. In addition, the field trials are pioneering the use of the Internet as a means of collecting and transmitting data from sites around the world using low bandwidth Internet connections.

KEY RESEARCH ACCOMPLISHMENTS

- Developed the multimedia Transfemoral Module-set
  - HTML versioning
  - Graphics
  - Production of Hybrid CD-ROM
  - Video Production and Editing
  - Translation into Spanish
- Developed the content for Transradial Module-set
  - HTML versioning
  - Graphics
  - Translation into Spanish
- Completed Training Module-set on Outcome Measures and introduced on-line data collection in two centers in Latin American.
  - HTML versioning
  - Graphics
  - Translation into Spanish
- Developed draft Module-set of CIR Transtibial Socket Fabrication System
  - HTML versioning
  - Graphics
  - Translation into Spanish
- Conducted Transfemoral Course
  - Organized a five day clinical and evaluation workshop in two countries
  - Tracked and managed students progress through the course
  - Conducted weekly on-line conferences/case presentations
- Created on-line data searching service on rehabilitation centers providing services to land mine survivors, amputees and other individuals
- Developed clinical outcomes data instruments, including 20-item functional assessment tool, 23-item quality of life survey, and 21-item patient satisfaction questionnaire
- Created integrated, secure web portal for electronic entry of clinical data for recording, tracking and analyzing clinical outcomes for land mine survivors and other clients of rehabilitation services in Central America
- Conducted an assessment of off-the-shelf teleconsultation software packages for the implementation of telemedicine and teleconsultation services in the CIR Network
- Distributed Request for Proposal (RFP) among Latin American universities and selected three centers interested in partnering with the CIR on the development of instructional content for a regional university degree program in Prosthetics/Orthotics
- Completed translation of the Transtibial module-set in Bosnian
- Completed a 5 week regional training needs assessment in the Balkan region
- Established field office in Bosnia at the Gradina Prosthetic Center in Tuzla, Bosnia
- Hired a Regional Coordinator and expatriate prosthetist to be based in Tuzla, Bosnia
- Worked collaboratively with WebCT on the development of the first ever Bosnian dialect language plug-in for delivery of courses through WebCT's Campus Edition 3.8.

- Completed student recruitment for the course in 2 of the major cities in Bosnia (Tuzla and Sarajevo)
- Developed student and mentor course evaluation forms and collected survey data for assessment of pilot program
- Developed survey of network members measuring communication and collaboration between members (social network survey) and collected data for assessment of program
- Developed student and mentor survey on technology tools usage and collected data for assessment of pilot program
- Developed cost model for cost projection and cost-benefit assessment of IRN program replication and expansion

REPORTABLE OUTCOMES

- Establishment of a joint curriculum development agreement with the University of New South Wales (UNSW) in Australia.
- Establishment of a Memorandum of Understanding with the Telethon Foundation Pro-Rehabilitation (FUNTER) clinic in San Salvador for the support of regional training and workshop activities, and collection of outcomes data on clinical services
- Establishment of an agreement with the Armed Forces Rehabilitation Center (CERPROFA) clinic in El Salvador for the collection of outcomes data on clinical services
- Collection and recording of clinical data on 29 consenting rehabilitation patients at the FUNTER and CERPROFA clinics for measurement of clinical outcomes for land mine survivors and other rehabilitation patients
- 48 hours of workshops for supervised clinical training for students
- 256 hours of unsupervised hands-on clinical work
- 320 hours of asynchronous didactic training
- 36 hours of synchronous training (12 on-line conferences and 12 case presentations)
- 160 hours of individual instruction from the on-line mentors
- Human subjects approval from Northwestern University
- Presentations on the IRN Project conducted internationally include Glasgow, Scotland (July 2001); El Salvador (February 2002); and Croatia (October 2002)

CONCLUSIONS

The CIR has completed a 10-month pilot program delivering prosthetic education using hybrid CD-ROMs ("adaptive media retrieval") and commercially available distance learning courseware. The program delivered a specifically designed continuing education curriculum to 23 prosthetic professionals from 11 rehabilitation centers in 3 Central American countries. These centers treat over 3,600 prosthetic/orthotic patients per year, of whom over 1,000 were injured as a result of conflict.

Initial analysis of the pilot program indicates that multimedia computer-based training provides a promising means to address the educational needs of allied health professionals internationally. In survey data collected after the course was completed, the

students reported having a positive learning experience, with particularly high ratings for the Instructor, organizational structure and content of the course. Improved practical examination scores indicated that the students had gained practical clinical skills through course instruction. Additionally, while many of the students had no prior experience with computers, survey results indicated high satisfaction with technical support and comfort with computer technology. An analysis of social network data indicates high levels of communication and collaboration among network members as a result of computer-based exchanges. Initial analysis of pilot cost data suggests the potential for the program to be a cost-effective means to deliver education and electronic services.

The integration of clinical and service directory databases into the CIR Network has been completed. Experience to date indicates that the Internet provides a promising platform for the secure electronic recording and reporting of information to improve the provision of rehabilitation services to landmine survivors and other war wounded in low-income countries that use low bandwidth Internet connections.

Center for International Rehabilitation
Annual Report to the Department of Defense
#DAMD17-00-1-0711
October 2002

Appendix A

The Center for International Rehabilitation
Lower Extremity Distance Learning Pilot Course
Participating Students and Centers

Juan Ventura
FUNTER
Calle el Pedregal Av L-E
Jardines de la Hacienda
Ciudad Merliot Antiguo Cuscatlan
San Salvador, El Salvador

Rene Estevez
FUNTER
Calle el Pedregal Av L-E
Jardines de la Hacienda
Ciudad Merliot Antiguo Cuscatlan
San Salvador, El Salvador

Mario Antonio García
FUNTER
Calle el Pedregal Av L-E
Jardines de la Hacienda
Ciudad Merliot Antiguo Cuscatlan
San Salvador, El Salvador

José Francisco Menjivar
Instituto Salvadoreño de Rehabilitación de Inválidos
Avenida Irazú, Colonia Costa Rica
San Salvador, El Salvador

José Oscar Miranda
CERPROFA
6a 10 Calle Poniente y 31 Ave Sur
#1609
San Salvador, El Salvador

Freddie Valladares
PODES
Colonia Miranda
Calle La Granjita No. 8
San Antonio Abad
San Salvador, El Salvador

Olga M. Monge de Quintanilla
Instituto Salvadoreño de Rehabilitación de Inválidos
Avenida Irazú, Colonia Costa Rica
San Salvador, El Salvador

Manuel de J. Bonilla
PODES
Colonia Miranda
Calle La Granjita No. 8
San Antonio Abad
San Salvador, El Salvador

Anibal Salinas Rivas
CERPROFA
6a 10 Calle Poniente y 31 Ave Sur
#1609
San Salvador, El Salvador

Jose Alfredo Bonilla
Instituto Salvadoreño de Rehabilitación de Inválidos
Avenida Irazú, Colonia Costa Rica
San Salvador, El Salvador

Berta García
AGREL
6A Av. "A" 36-01 z. 11
Cuidad de Guatemala, Guatemala

Cesar A. Negreros Acuna
Instituto Guatemalteco del Seguro Social (IGSS)
14 Avenida 4a. Calle, Zona 12
Colinas de Pamplona
Ciudad Guatemala, Guatemala

Otto F. Ulin Sian
Instituto Guatemalteco del Seguro Social (IGSS)
14 Avenida 4a. Calle, Zona 12
Colinas de Pamplona
Ciudad Guatemala, Guatemala

Victor Ganados
CADEG
11 Avenida "A" 32-46 Zona 5
Ciudad Guatemala, Guatemala

Hugo Castillo
Instituto Guatemalteco del Seguro Social (IGSS)
14 Avenida 4a. Calle, Zona 12
Colinas de Pamplona
Ciudad Guatemala, Guatemala

Luis Guillermo Martinez
CENAPRORTO
Km. 5 Ctra. Sur detras del Hospital de Rehabilitacion
Managua, Nicaragua

Freddie Hernandez
CENAPRORTO
Km. 5 Ctra. Sur detras del Hospital de Rehabilitacion
Managua, Nicaragua

Mario José Icaza
Walking Unidos
Esquina de los Blancos 1 ½ Calle Arriba
León, Nicaragua

Roque Ramirez
Walking Unidos
Esquina de los Blancos 1 ½ Calle Arriba
León, Nicaragua

Robert Moncada
Handicap International Trinidad
Distribuidora Vicky 1 Calle al Lago y ½ calle Arriba
Managua, Nicaragua

Saúl Castillo
Handicap International Trinidad
Distribuidora Vicky 1 Calle al Lago y ½ calle Arriba
Managua, Nicaragua

Zayda Montenegro
Walking Unidos
Esquina de los Blancos 1 ½ Calle Arriba
León, Nicaragua

Mario Rodriguez Cerrato
CENAPRORTO
Km. 5 Ctra. Sur detras del Hospital de Rehabilitacion
Managua, Nicaragua

Center for International Rehabilitation
Annual Report to the Department of Defense
#DAMD17-00-1-0711
October 2002

Appendix B

Request for Proposals
Under the
CIR/PAHO Distance Learning Initiative

I. EXECUTIVE SUMMARY

The Center for International Rehabilitation (CIR), the Pan American Health Organization (PAHO) acting under the framework of the Tripartite Central America Landmine Initiative are putting forth a request for proposals from educational institutions in Latin America. The purpose of this call for proposals is to select an institution to assist the partners in the development and delivery of a degree program in prosthetics and orthotics using distance learning technologies, including the delivery of specially-adapted educational content through a Web-based platform. The selected educational institution will serve as the regional hub, develop additional content for the distance learning program, provide technical support in the form of a help desk for Spanish speaking participants, and organize and staff clinical workshops. Only those proposals with comprehensive action plans, time lines and corresponding budgets will be considered.

Partners

The Center for International Rehabilitation (CIR) is a non-profit organization that is "committed to helping people with disabilities worldwide reach their full potential." The CIR operates with the assistance of the U.S. Department of Defense's Telemedicine and Advanced Technology Research Center (TATRC) and the U.S. Department of Education's National Institute on Disability and Rehabilitation Research (NIDRR), and manages the Rehabilitation Engineering Research Center (RERC) on Improved Technology Access for Landmine Survivors. The RERC focuses its attention in the development of high-quality and low-cost mobility aids, rehabilitation technologies and education programs that improve the quality and availability of services for the survivors of land mines and other people with disabilities in low-income countries.

The Pan American Health Organization (PAHO/WHO) is the regional office of the World Health Organization (WHO) for the Americas and the specialized health agency of the Inter-American system. Among other things, PAHO is committed to supporting institutional development to assist in the provision of health services and rehabilitation programs for landmine survivors living in El Salvador, Honduras and Nicaragua (the Tripartite Landmine Initiative).

Eligibility

Only applications submitted under accredited educational institutions legally established in Latin America will be considered. In addition, all educational institutions must be members of the Center for International Rehabilitation Network (CIRN).

Evaluation and Selection Criteria

Proposals submitted to the CIR/PAHO Distance Learning Initiative will be evaluated on the following criteria (based on a point system).

- Technical description of the program (40 points)
- Administrative aspects (previous experience of the organization and its current staffing capacity) (40 points)
- Cost (20 points)

Technical description – The applications should reflect a strong understanding of the CIR's current distance learning activities. The presented plan should detail the methodology of how the organization will reach its proposed goals. Integral to this is the organizations previous experience in curriculum development and information technologies, particularly, the ability to provide support to all user groups. The organization must include in their proposal an evaluation plan, a follow-up plan and a schedule for progress reports. Indicators that must be included in the progress reports are number of prosthetic and orthotic education modules completed to date, an update on the completion time frame, technical recommendations on the delivery of course content, documentation and analysis of information, and presentation of financial reports and audits. The CIR will give priority to those organizations that show skills in searching for solutions, not identifying problems.

40 points

Administrative aspects – The awarded organization will be responsible for the financial and administrative management of the program. The applications must reflect previous experience in the effective administration of similar programs and the skill to carry out programs in a rapid and efficient manner. The organization must have the needed faculty and professional staff to carry out the program goals, and be able to demonstrate their administrative, financial and planning skills.

40 points

Cost – The economic aspects of the proposal will be evaluated with respect to their justification and affordability in comparison to the proposed activities.

20 points

II. BACKGROUND

The Problem

The World Health Organization (WHO) estimates that 80% of people with disabilities live in low-income countries and only 2% has access to some type of service or help. People with disabilities in developing societies face some of the most difficult challenges on Earth. Furthermore, the International Society of Prosthetics and Orthotics (ISPO) indicates that even though there is an unmet demand of 40,000 technicians, it will take approximately 50 years to train 18,000 technicians.

Besides the costs of salaries, significant investments would have to be made to build and maintain the necessary prosthetic infrastructure to support the workforce. As a result of internal conflicts, other obstacles also exist in the availability of prosthetic services in developing countries, where the majority of people with disabilities reside. Scattered populations, geographic and physical conditions, lack of transportation and the presence of wars, non-detonated explosives and anti personal mines are barriers to the delivery of services. For this reason, in the absence of innovative initiatives to carry out the delivery of prosthetic services, people are not able to find long-term services. Current service delivery is in constant danger given that organizations involved in humanitarian assistance are unable to provide services for an indefinite period of time.

Background on current activities

This document describes the activities to be supported in Central America during an initial one- year period beginning on January 14, 2002. These activities represent an extension of the partners' programs, which were developed with support from the of the U.S. Department of Education's National Institute on Disability and Rehabilitation Research (NIDDR), and the U.S. Department of Defense's Telemedicine and Advanced Technology Research Center (TATRC).

To date, the CIR and PAHO have established a network of service providers, universities and consumers with disabilities in the Latin American region, the Center for International Rehabilitation Network (CIRN). The CIRN is designed to facilitate the provision of technical and administrative assistance in the areas of professional education, research and development and program administration. The CIRN organized the First Regional Conference of the Center for International Rehabilitation in Managua, Nicaragua, in May 2001. More than 100 representatives of regional and international organizations participated in the Conference.

Results of the conference included a consensus document produced by a group of 25 rehabilitation professionals including rehabilitation experts, administrators of rehabilitation facilities, community leaders and consumers. These experts declared that the lack of availability of continuing professional education is an area of priority. Continuing professional education is important to anyone who wants to be involved in

prosthetics, orthotics and rehabilitation medicine. In a field that is rapidly changing, with advances in materials, components and practices, technicians must remain abreast of new developments and keep in touch with the timeless touchstones of prosthetic science. Effective prosthetists not only have to master the complex body of knowledge and practice, they also must commit themselves to lifelong learning and to the mastery of the tools necessary to accomplish it.

Delivery of Education via Distance Learning – The CIRN's Lower Extremity Distance Learning Pilot Program was designed and is operated to address professional education needs. A Pilot Program was initiated in June of 2001 to deliver continuing professional education to prosthetic technicians who work in Central American rehabilitation facilities. Through this Lower Extremity Distance Learning Program, the CIR developed an innovative methodology to allow prosthetic technicians to participate in continuing education coursework. The CIRN transfers the essential principles of lower extremity prosthetics through the development and delivery of didactic content via a Web-based platform. The program strengthens technical skills while simultaneously diminishing the need for students to travel long distances for traditional training courses.

This pilot program was specifically designed to reacquaint the practicing prosthetist with the fundamentals of prosthetic science and to familiarize them with information technology, including the Internet and World Wide Web, which can be important tools to facilitate professional networking and lifelong learning. The Center for International Rehabilitation Network (CIRN) is committed to delivering this continuing professional education in partnership with rehabilitation clinics and hospitals delivering services to people with disabilities worldwide. The CIRN believes that increasing the quality and availability of continuing professional education is vital to ensuring lifelong access to quality prosthetics and rehabilitation services, which is the right of every amputee and person with disability regardless of where they live. As part of the academic training, students have to satisfactorily complete prosthetic module sets through the application of an interactive multimedia distance learning methodology.

The program incorporates a blended approach to distance learning. Synchronous and asynchronous on-line activities and self studies are merged with workshops to provide practical training and verify the ability of the student to assess, cast, modify, laminate, align and manufacture a prosthetic device. Practical training includes the evaluation of the amputee's needs in a clinical environment and the fabrication and fitting of prostheses under the supervision of professional and qualified prosthetists. Students have the opportunity to use their communication, patient management, education and prosthetic skills through real encounters with patients. Topics such as causes and levels of amputations, pre and post-prosthetic care, components, and criteria for prescription are covered during workshops.

Materials utilized in the training include text, videos and graphics. Materials are delivered through print as well as through the world-wide-web and hybrid CD-ROMS that contain high-quality videos and high-resolution graphics. All educational modules, and in some cases "store and forward" teleconsultation (digital images transmitted as e-

mail) and telementoring activities, are made available through a courseware produced by WebCT's web management system. In addition to interactive, internet-based training and testing, the program incorporates on-line student-teacher interaction and communications with CIR on-line mentors through chat rooms and bulletin boards. Also, students are required to participate in on-line conferences

III. GOALS OF THE REQUEST FOR PROPOSALS (RFP)

The purpose of this RFP is to identify regional education institutions interested in creating a distance education degree program in prosthetics and orthotics using Internet technologies.

IV. GOALS OF THE PROGRAM

The overall goal is to expand the distance education pilot program developed by the CIR, combining information technology infrastructure with distance learning technology and educational content in order to ensure quality services for landmine survivors and other amputees in Latin America.

For each of the objectives listed below, an action plan, timeline and budget must be included. Specific objectives of the program are as follows:

Objective 1 - Development of Content

> *To expand the existing model prosthetic and orthotic curriculum for use in Latin America as part of a distance learning degree program*

In coordination with a regional university, the partners would like to develop additional prosthetic and orthotic content. The universities will have access to the lower extremity prosthetic continuing education module-sets developed by the CIR and the methodology used to develop them. By using the established format additional module-sets can be created in the following areas:

1. Lower Limb Orthotics
2. Above Elbow Prosthetics
3. Below Elbow Prosthetics
4. Spinal Orthotics

This activity has been divided into 4 areas: (i) development and adaptation of basic content; (ii) preparation of descriptive drawings and graphics; (iii) filming and editing of videos; and (iv) development of evaluation tools.

In addition to technical support in the area of prosthetics, internet-based delivery and instructional design, the partners would extend a free license to the qualifying institution

for the use of Web CT courseware and a non-exclusive Spanish language license for use of all content of the partners prosthetics and orthotics distance learning program. Such content would be available for use in any and all of the institution's educational programs by students enrolled in the institution.

The CIR would own all intellectual property rights in and to any programs, materials and products developed in connection with the activities contemplated hereby. However, this property would be available for use by the institution under free license from the CIR. Use and presentation of existing and additional distance learning content would need to conform to specifications determined by the CIR (including acknowledgement of the CIR and display of the CIR logo and graphic identity).

Both during and after an agreement between the CIR and PAHO and the qualifying institution, disclosure of confidential or proprietary information to a third party or use is prohibited. Transfer or licensing of the distance learning content to other parties without the written permission of the partners is prohibited.

Objective 2 - Technical Support

> *To develop the necessary technical support to operate a computer help desk for those students enrolled in the distance-learning course.*

The qualifying organization would also establish and maintain a "call center" or "help desk" that is able to give technical support in computers. This "call center" will play an important role in the program because it will be responsible for the management of the appropriate accessibility and communication among the organizations involved with the program.

The qualifying organization will be required to develop of a "manual of frequently asked questions" relateing to the use of computers and Internet, and the of distance learning materials.

Objective 3 – Clinical Workshops

> *To coordinate, conduct and staff midterm and final clinical workshops for the prosthetic students.*

Students enrolled in the distance learning program will be required to attend workshops to provide hands-on training and to verify the trainees' ability to evaluate, cast, modify, laminate, align, and manufacture a prosthetic device. Staff must be willing to travel, or to organize and host the workshops. Practical training will include the assessment of the needs of the amputee in a clinical setting and the actual fabrication and fitting of a prosthetic device under the supervision of qualified prosthetic professionals. The trainees should have the opportunity to use their communication, patient management and education, and prosthetic skills in actual encounters with patients. Causes and levels of

amputations, pre and post prosthetic care, components and prescription criteria will be covered during the workshops.

V. FINANCING

The distribution of funds for this program will be based on the applications received from the organizations. The partners reserve the right to finance the program partially or in full depending on the availability of funds. Interested organizations should be able to provide some level of matching funding or resources. As part of the application the level of such support should be adequately identified.

The partners will give grants for the purpose of reaching the goals described in this section. The donation will provide enough resources to support the selected organizations in the development of the proposed activities. Also, the partners will make available to the different centers personnel specialized in each of the described areas, which will offer initial training of the staff, as well as technical and administrative support.

VI. CONTENT OF APPLICATIONS

Applications must be concise, organized and approximately 10 pages long. It is suggested that the following format be used for the presentation of proposals.

I. Executive Summary

II. Technical Description
   A. Goals and Objectives - A description of the goals of the proposed program.
   B. Background/identification of problems
   C. Technical Approach / Proposed Interventions –Action plan/proposed strategies to carry out the program
   D. Expected Results – Goals that demonstrate that the aims of the program have been reached.
   E. Monitoring Plan – Method by which the program results will be tracked and reported.

III. Administrative aspects – Include the organizations plans to administer the activities of the program, give a description of and justification for the proposed staff, and list their previous experience (can be provided in the form of a curriculum vitae). Clearly explain how the local and/or regional activities of the center will benefit from the proposed program.

IV. Timeline - Calendar of Activities

V. Financial Plan – For each activity listed on the proposal, a financial plan and budget must be included. This plan should contain a detailed description of those

activities that the applicant is already financing and those requested to be financed under this program. A complete explanation of accounting controls and financial accountability must be included.

VI. Certifications, Regulations and Legal Documents – Include copies of the institutions governmental status (public or private, nongovernmental or governmental), accreditations, and applicable bylaws.

VII. DEADLINES

The CIR estimates that the program will last one year beginning on January 1, 2003.

Interested organizations must send 2 complete copies of their proposal to:

Center for International Rehabilitation
Latin American Desk Officer
351 E. Huron, 2nd Floor Annex
Chicago, Illinois 60611

The last day for the presentation of proposals will be March 21, 2002. Questions or clarifications must be sent to Hector Casanova at the following address: h-casanova@nwu.edu fax number (312) 926-7662. All questions and answers will be distributed for the benefit of all interested organizations.

Center for International Rehabilitation
Annual Report to the Department of Defense
#DAMD17-00-1-0711
October 2002

Appendix C

CIR curriculum

YEAR 1: SEMESTER 1	Academic Hours/Week
Enrollment, Introduction & Computer Training	1
PROR 1121: Biology for Prosthetics and Orthotics	3
MATH1060 Mathematics for Prosthetics & Orthotics	3
PHYS1103 Physics for the Human Musculoskeletal System	3
PROR1115 Medical Conditions, Functional Aspects for Prosthetics & Orthotics Rehabilitation	3
PROR1116 Introduction to Prosthetics & Orthotics	6
PROR1114 Introduction to Prosthetic & Orthotic Laboratory and Materials	3
(CIR) Introduction to Practical (last week of 1st sem.)	(credit in 2nd sem.)
	Total = 22

YEAR 1: SEMESTER 2	Academic Hours/Week
(CIR) Introduction to Practical (first week of 2nd sem.)	3
PROR1205: Lower Limb Anatomy for P&O	2
PROR1220: Physiology for P&O	3
MATS9081 Materials in Prosthetics & Orthotics	3
(CIR) Trans-tibial, Syme's & Partial Foot Prosthetics (Theory)	3
(CIR) Trans-tibial, Syme's & Partial Foot Prosthetics (Applied)	6
	Total = 20

YEAR 2: SEMESTER 1	Academic Hours/Week
PROR2102 Functional Lower Limb Anatomy for Prosthetics & Orthotics	3
PROR2103 Biomechanics for Prosthetics & Orthotics	3
PROR3214 Clinical Topics for Prosthetics & Orthotics	3
PROR2212 Trans-femoral & Hip Disarticulation Prosthetics (Theory)	8
PROR2213 Trans-femoral & Hip Disarticulation Prosthetics (Applied)	3
	Total = 20

YEAR 2: SEMESTER 2	Academic Hours/Week
PROR2201 Clinical Aspects of Gait Disorders	3
PROR1205 Upper Limb Anatomy for P&O	2
PROR3112 Upper Limb Prosthetics (Theory)	3
PROR2101 Pathology for Prosthetics & Orthotics	3
PROR3114 Upper Limb Orthotics (Theory)	3
PROR3113/PROR3115 Upper Limb Prosthetics & Orthotics (Practical)	6
	Total = 20

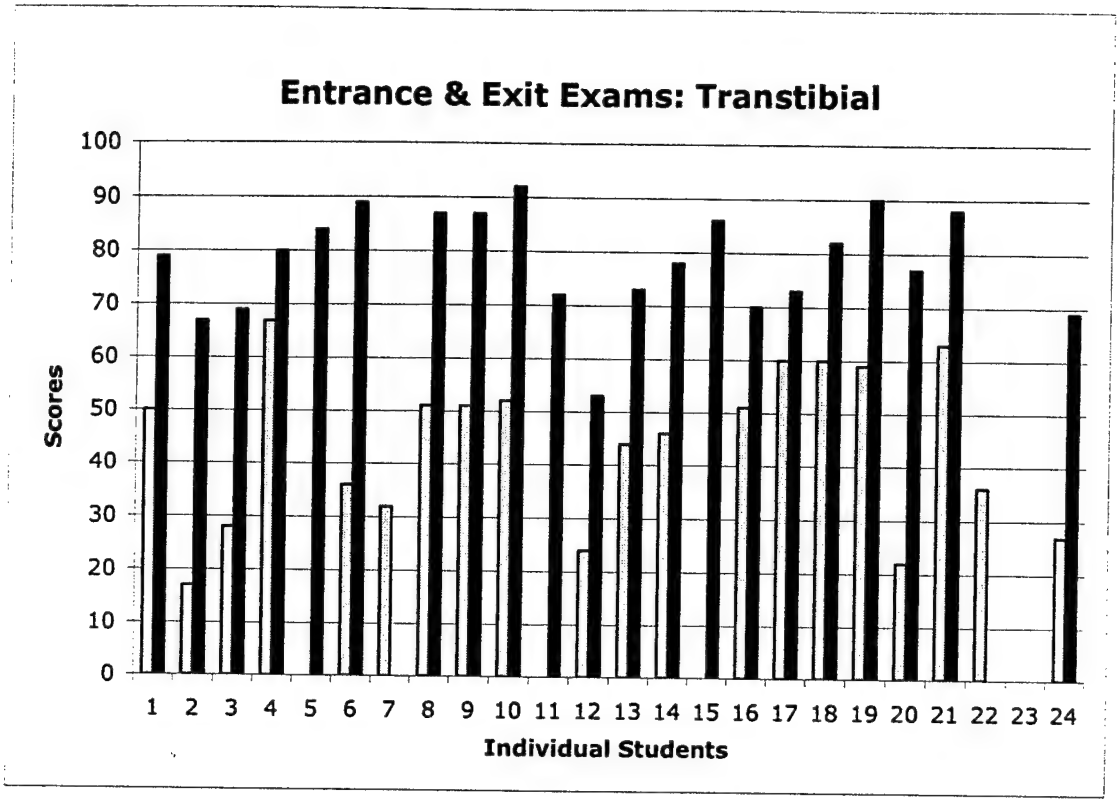
YEAR 3: SEMESTER 1	Academic Hours/Week
PROR3111 Orthopedics and Mobility Aids for Prosthetics & Orthotics	6
PROR3216/PROR4116 Ethical & Management, Research Methods	3
PROR1217 Lower Extremity Orthotics (Theory)	6
PROR1218 Lower Extremity Orthotics (Practical)	6
	Total = 21

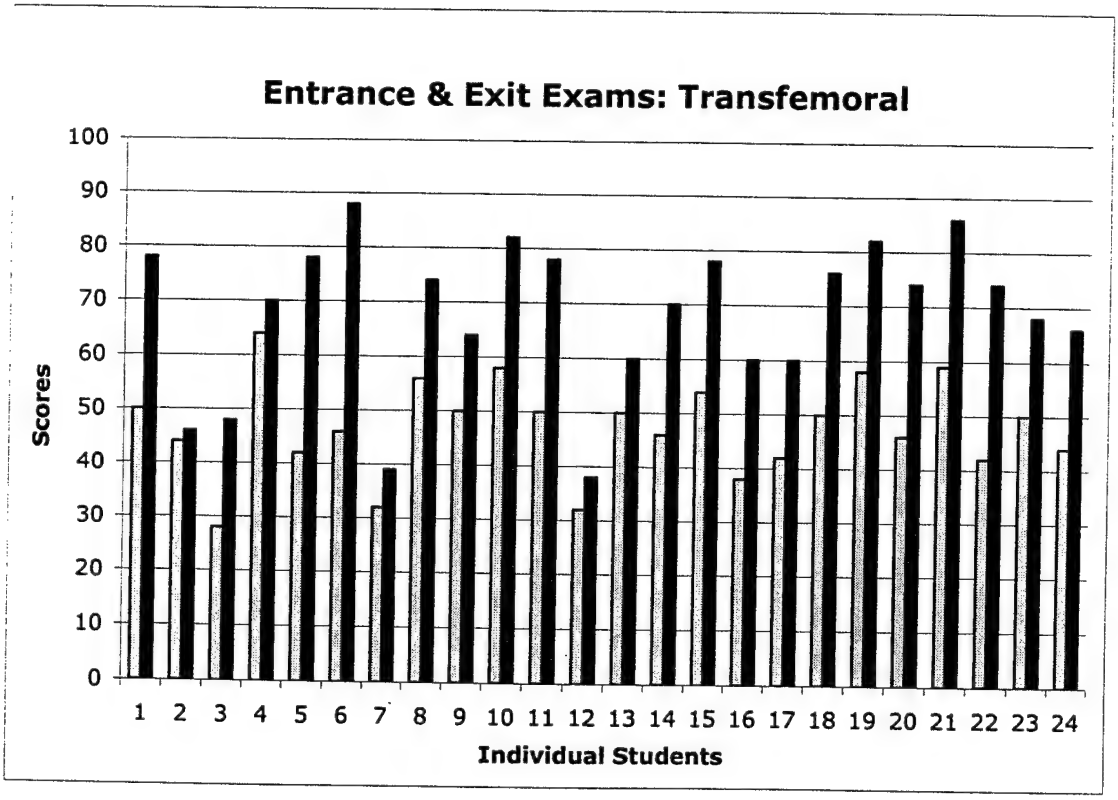
YEAR 3: SEMESTER 2	Academic Hours/Week
Pediatrics	3
Student Project	3
Spinal Orthotic (Theory)	8
Spinal Orthotic (Practical)	6
	Total = 20

Grand Total Program hours = 123

Center for International Rehabilitation
Annual Report to the Department of Defense
#DAMD17-00-1-0711
October 2002

Appendix D


Entrance & Exit Exams: Transtibial
Scores
100
90
80
70
60
50
40
30
20
10
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Individual Students


Entrance & Exit Exams: Transfemoral
Scores
100
90
80
70
60
50
40
30
20
10
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Individual Students

Center for International Rehabilitation
Annual Report to the Department of Defense
#DAMD17-00-1-0711
October 2002

Appendix E

Follow Up and Verification Form

Name of the student _____ **Center** _____

Date _____ **Mentor** _____

	1	2	3	4	5	6	7	8	9	10	11
Modules completed T.T. ☐ T.F ☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

	Excelent	Good	Acceptable	Needs practice	Not acceptable
Patient Evaluation and Casting					
Professional behavior displayed	☐	☐	☐	☐	☐
Procedures followed correctly	☐	☐	☐	☐	☐
Evaluation complete	☐	☐	☐	☐	☐
Measurements and landmarks accurate	☐	☐	☐	☐	☐
Plaster wrap and hand placement appropriate	☐	☐	☐	☐	☐
Cast Modifications					
Proper reductions and buildups	☐	☐	☐	☐	☐
Plaster work is neat and efficient	☐	☐	☐	☐	☐
Fabrication					
Displays proper lab safety	☐	☐	☐	☐	☐
Laminations/plaster performed correctly	☐	☐	☐	☐	☐
Bench alignment	☐	☐	☐	☐	☐
Final fitting of the patient					
Socket fit appropriate	☐	☐	☐	☐	☐
Trimelines appropriate and edges finished	☐	☐	☐	☐	☐
Comprehends static alignment concepts	☐	☐	☐	☐	☐
Comprehends dynamic alignment concepts	☐	☐	☐	☐	☐

Center for International Rehabilitation
Annual Report to the Department of Defense
#DAMD17-00-1-0711
October 2002

Appendix F

Student Evaluation Form

No names will be associated with this evaluation form.
Do NOT record your name on this form.
Total number of responses = 23.

C I R

Please rate each course category according to the given scale:

Instructor: Hector Cassavova **Average rating = 4.70; Low = 3 High = 5**

Poor.....Average.....Excellent

Your Mentor **Average rating = 2.70; Low = 1 High = 5**

Poor.....Average.....Excellent

Technical Support **Average rating = 3.52; Low = 1 High = 5**

Poor.....Average.....Excellent

Organization of the course **Average rating = 4.22; Low = 3 High = 5**

Poor.....Average.....Excellent

Content **Average rating = 4.25; Low = 3 High = 5**

Poor.....Average.....Excellent

Online chat **Average rating = 3.83; Low = 1 High = 5**

Poor.....Average.....Excellent

Please rate each statement according to the given scale:

The expectations were clearly stated for the Transtibial/Transfemoral course.

Average rating = 4.48; Low = 1 High = 5

Strongly Disagree | Somewhat Disagree | Neutral | Somewhat Agree | Strongly Agree

I was pleased with my interactions with my mentor.

Average rating = 3.30; Low = 1 High = 5

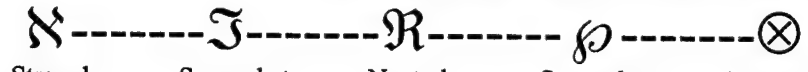
Strongly Disagree | Somewhat Disagree | Neutral | Somewhat Agree | Strongly Agree

Student Evaluation Form

No names will be associated with this evaluation form.
Do NOT record your name on this form.
Total number of responses = 23.

Please rate each statement according to the given scale:
I received adequate support from the regional technical support personnel.

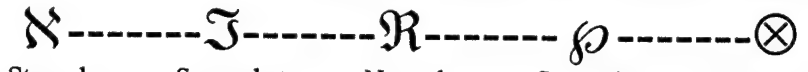
Average rating = 4.00; Low = 1 High = 5



Strongly Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Strongly Agree

I was comfortable using the computer for this course.

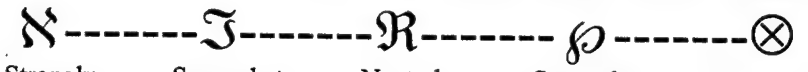
Average rating = 4.17; Low = 1 High = 5



Strongly Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Strongly Agree

I was able to spend as much time as needed using the computer for this course.

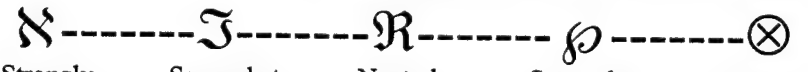
Average rating = 3.96; Low = 1 High = 5



Strongly Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Strongly Agree

I wish I had my own email account rather than the WebCT email.

Average rating = 3.91; Low = 1 High = 5



Strongly Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Strongly Agree

No names will be associated with this evaluation form.
Do NOT record your name on this form.
Total number of responses = 23.

What did you learn in this course that was most helpful?

- The new techniques for the elaboration of prosthesis and the use of the computer as a form of study.
- "All of the theory was very important, as the knowledge that we had was with very little theoretic support."
- "I consider that the most useful was, learning to operate the computer and the entrance into the internet and the web page. "
- "It appears to me, that everything that we have learned is going to be very useful to us. "
- Anatomy and Biomechanism.
- "Well, first, the collectivity between the participating comrades in Nicaragua where I obtained new knowledge of prosthesis as we enriched our knowledge."
- The use of the computer on The Web.
- Some learning techniques.
- The technical concepts.
- "First, the computer, because through it I can access the knowledge of the course, that are also very important to me."
- The Theory obtained in learning was the most useful along with the practices of the Transfemoral and Transtibial courses with images on the CD-ROM with the computer.
- "Measurement and modification of the Transfemoral and this way apply the ""reduction bench."
- The techniques and process of alignment.
- The detailed technique.
- The techniques and the practical exams in which you learn a lot.
- All of the content of the course.
- "Everything that was taught, was well understood and explained."
- "In general, all that corresponded to the course because it was very useful to expand my knowledge which serves to excel personally and the quality of the attention given to the patient."
- "Some of Anatomy, Bench Alignment And Dynamic and the evaluation of the patient."
- All of the courses that were taught and being able to use the computer which I would never have done. Everything that you have taught us is very useful.
- Everything on the study modules and the use of the computer. The good Communication of the CIR Personnel.
- A new technique and of course the computer.
- The taking of measurements and alignments and prosthetic fittings.
- "In the practices, the mentors and their knowledge were shared correctly with the students and all of the information on the modules Transtibial and Transfemoral."

No names will be associated with this evaluation form.
Do NOT record your name on this form.
Total number of responses = 23.

To improve this course, what areas of this course were most confusing or which topics would you like more information about?

- "The use of modular components, static alignment. I would like to know more about Pathology. "
- On the preparation of the theoretic preparatory practices.
- "It would be good to generalize the terms to a C.A. level, and more information on taking measurements and alignments."
- "When we started, it seemed kind of difficult to me, but with the explanations, I started understanding much better.
- "Alignment and Modification.
- "In this aspect it would be in dynamic alignment, and I think that the rest was very good. And I hope that all of the material is maintained accessible so that we can clear up any doubts that we might have."
- More objective information (CIRN) and adequate translations of some terms.
- I would like more information on the Transtibial and Transfemoral Biomechanism.
- "Strengthen the information area, as in the beginning it was some what confusing. "
- It would be good to improve the translations in which the same term would be used.
- "Bench alignment, static and dynamic. I think it was very hastened, besides, the components were not organized correctly. "
- The tension values bench.
- "The subjects of the exam, the questions were not very clear."
- Alignment.
- In the taking of measurements and modification of the Transfemoral casting.
- M/S and Orthotics.
- "I don't think that there were any confusing areas, just translation errors in some words or terms. It would be good for you to provide us with some terms in English with their respective translations so that we will be able to utilize them. " Anatomical and statical theory.
- "More than anything, that I reached my goals in the formation of my cast, even if we didn't receive the tension benches until the end."
- The information on Anatomy and Pathology on the CD-ROM.
- The questions on the exam of every module sometimes translated wrong to Spanish.
- Transfemoral
- A bit more on anatomy.

What changes would you make for the next course?

- "Personally, I would be a bit more dedicated."
- "That the material that will be used during the course be available from the beginning, and not complement some information after the module has begun, ex. (Tension values Bench). "
- Improve the relationship of mentors towards students and give more support.
- Look for a bigger place for the practices and more tools for the jobs.
- Place and area.
- I think that it would be good that there be better communication with the administrators and require that they commit themselves to donate the support that we need.
- Only improving the content of some terms.
- None
- That the participation be more expanded and that participation conditions be considered of the students in their centers.
- "That the next course, have sufficient study time, to learn more, meaning, expanding the course. "
- It would be good that the prosthesis be given to the patients.
- "That the one who prepares the exams, be a prosthetist, meaning one who knows the subject, so that the exams will be understandable. "
- "That the one who translates to Spanish be a prosthetist, meaning that the person know the subject, so that the exams contain questions, very well formulated."
- A bit more organization in the practice.
- More Illustrative with Video or CD-Rom.
- "That you did not come with more time, so that we wouldn't feel with so much pressure."
- "try to improve the relationship with the mentors, because some of them didn't even function as a whole. Try to send the material on time and in form."
- "A superior member for many patients is what is needed, for example in Agrei."
- "I don't think that there would be much of a change, the only thing would probably be to improve the communication with Northwestern so that it can provide us information. "
- None.
- Find a place for the practical exam that is more adequate.
- Fisical Area
- To have a bit more contact with the mentors and the rest of the students.

Additional comments and suggestions:

- "Generally speaking, I consider the course to be an excellent learning method. I would like, that we in a short period of time, are able to take the next courses, including in the Orthotic area; to be able to manage the Pathology area a bit more."
- "To be able to have a better control of the mentors, it would be very interesting to rotate the mentors at least one time.
- To have better control and verify if all are doing their job."
- "If we would have more on line connection time, it would be of a greater benefit to learn more in general. "
- "I am very happy because through CIR, I have learned to use a computer and the e-mail."
- None.
- "It would be good to focus on the quality of the internet connection. Because in CENAPRORTO it is very difficult to have a good connection because it is a telephone line that is also occupied as a Fax and if we connect on line, they can't use it and vice versa. "
- "At the same time the opportunity offered satisfies me but, it is necessary to select the adequate place for the practices according to the number of students of the CIRN."
- It would be good for you to send us written information on de module's techniques on the subject.
- I only want to exhort you to continue with this type of program. Thank you.
- I would like to have more use and teachings on the computer to be able to communicate with everyone and be able to study the courses more in detail.
- "Bench alignment static and dynamic, I think was very hastened, besides, the components were not organized correctly. "
- "Have a more adequate place for the evaluations, ""The fisical area larger"". "
- "That there be a close follow up of the student and that you ask the students which are the problems that they could be facing during the course. I recommend Hector Casanova, he is a very good instructor."
- Congratulations and keep on and thank you for teaching us to give a better quality of life.
- The place where the practice trails took place was too small and there was a lack of tools and equipment.
- Congratulate Ceci for the food because today I felt right at home.
- That the next evaluations be donde in a place that offers better conditions.
- I am very satisfied with the course and I would like for the communication of the mentor to the student improved.
- "It would be necessary that the use of the computer of our institution, be more accessible, as there is no support and because of that it is very bad. "

No names will be associated with this evaluation form.
Do NOT record your name on this form.
Total number of responses = 23.

- "Only appreciate the help and patience that you had with all of us students and the knowledge that you taught us without any egoism. With all my heart, Thank You."
- None.
- I would like you to give a course on hip dislocation.
- "Personally, I learned a lot on how to use a good technique socialize with the other comrades, and also use a computer, Thank you very much."

Mentor Evaluation Form

C I R

No names will be associated with this evaluation form.
Do NOT record your name on this form.
Total number of responses = 3.

Please rate each course category according to the given scale:

Instructor: Hector Cassanova **Average rating = 4.33; Low = 4 High = 5**

Poor.....Average.....Excellent

Technical Support **Average rating = 4.67; Low = 4 High = 5**

Poor.....Average.....Excellent

Organization of the course **Average rating = 4.00; Low = 3 High = 5**

Poor.....Average.....Excellent

Content **Average rating = 4.33; Low = 3 High = 5**

Poor.....Average.....Excellent

Design layout of online materials **Average rating = 4.67; Low = 4 High = 5**

Poor.....Average.....Excellent

Online chat **Average rating = 3.33; Low = 2 High = 5**

Poor.....Average.....Excellent

Please rate each statement according to the given scale:

The amount of work for mentors was... **Average rating = 2.33; Low = 1 High = 3**

Far Too Light	Somewhat Light	Just About Right	Somewhat Heavy	Far Too Heavy

The mentor's role with regard to students was clearly defined.

Average rating = 3.33; Low = 3 High = 4

Strongly Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Strongly Agree

Mentors were given adequate directions before and during the courses.

Average rating = 4.00; Low = 3 High = 5

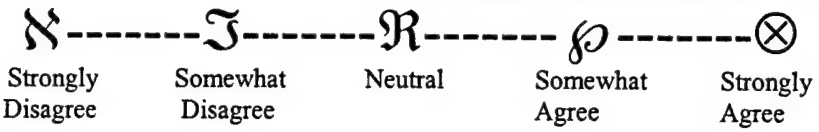
Strongly Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Strongly Agree

Mentor Evaluation Form

No names will be associated with this evaluation form.
Do NOT record your name on this form.
Total number of responses = 3.

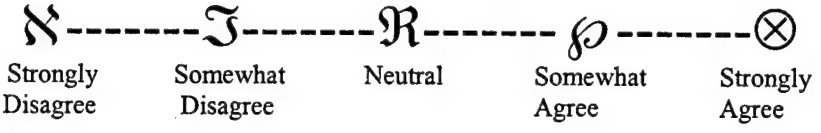
Please rate each statement according to the given scale:
I was pleased with my interactions with the instructor.

Average rating = 4.33; Low = 3 High = 5



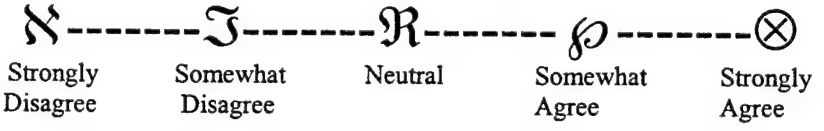
I received adequate support from the regional technical support personnel.

Average rating = 4.67; Low = 4 High = 5



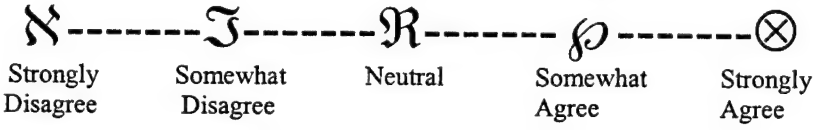
I was comfortable using the computer for this course.

Average rating = 5.00; Low = 5 High = 5



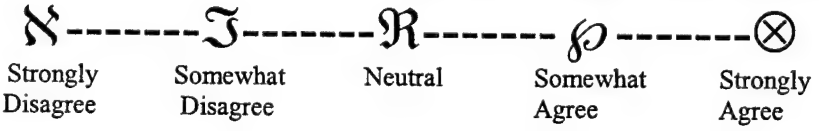
I was able to spend as much time as needed with students for this course.

Average rating = 5.00; Low = 5 High = 5



I wish I had my own email account rather than the WebCT email.

Average rating = 5.00; Low = 5 High = 5



No names will be associated with this evaluation form.
Do NOT record your name on this form.
Total number of responses = 3.

Did you have any problems with the content or delivery of the course?
No Problems.
I did not have one written module sent by CIR for revision or analysis.

Was there any activity you wish you had more time for?
Personally supervise students.
To be more acquainted with the students in the work initially.

What changes would you make for the next course?
Program monthly student visits.
Have the printed modules from the very beginning or whichever instrument or program necessary for the development and analysis.

Additional comments or suggestions?
It developed normally.
Initial measurement course to mentors. Carry out weekly coordinations between mentors and administration or instructor. Develop the mentor's functions in detail and have correspondence with the obligations of the students.

Center for International Rehabilitation
Annual Report to the Department of Defense
#DAMD17-00-1-0711
October 2002

Appendix G

Social Network Analysis Pilot
Center for International Rehabilitation (CIR)

10.02.02

Donald W. Wortham, Neodacta
Michael K. Potts, CIR

Overview

By delivering continuing education to geographically dispersed rehabilitation centers, the CIR acts as the hub of a community of professional practice. While it may be central to this community, the CIR also aims to foster rich communication among program participants. In Summer 2002, the CIR launched an innovative pilot project to assess the *social networks* formed through its educational program offered in Nicaragua, El Salvador and Guatemala.

Previous research has shown that dense social networks promote the formation and exchange of social capital, a key dimension of communities of practice (Brown & Duguid, 2000). Since communication flows across these networks, the CIR views them as a kind of distribution system. The system is made up of the relationships that exist among group members, and is useful for the exchange of resources (human and otherwise) that are available within the group to members or collections of members on account of these relationships. This potential for the exchange of resources is a kind of social capital (for a different but complimentary view of social capital, see Fukuyama [1999] and Putnam [2000]).

With respect to its Central American educational network, the CIR wanted to answer the following questions. Taking rehabilitation centers as the unit of analysis, did certain centers appear to share more communication pathways? Were other centers especially isolated? Were certain types of sub-groups, such as technical support, particularly central to the network?

The CIR also wished to "drill down a level" and investigate social networks at the individual level. With respect to program participants, who held a relationship with whom? Who was isolated?

Frameworks and Method

Over the past 25 years, social science researchers have developed concepts and a set of techniques to describe social networks (see for instance Burt, 1992; Freeman, 1978/79; Freeman, 2000; and Wasserman & Faust, 1994). For this pilot project, the CIR focused on two primary techniques: matrix analysis of network data, and multi-dimensional scaling (MDS) and three-dimensional display of data.

At the end of the Spring 2002 semester, 33 participants submitted survey responses that tabulated their communication history with other network members. Respondents worked individually; only responses where both parties agreed about sharing a communication history were included in this analysis. Valid responses were entered into a 13 by 13 matrix (sub-groups) and 33 by 33 matrix (individuals) and analyzed using Excel (Microsoft, 2002), and Netvis (Cummings, 2002) which incorporates the R- MDS routine (Gentleman and Ihaka, 1997).

Findings: Centers as Unit of Analysis

The reader is directed to Figure 1 below. The thirteen geographically separate centers of operation of CIR's Central America network are represented as spherical nodes. Black nodes depict CIR instructional and administrative centers in the US, Spain and Central America, while student centers in Guatemala, Nicaragua and El Salvador are represented by gray spheres. Lines in the diagram appearing between spheres represent communication pathways: both sub-groups connected by a line acknowledged sharing direct communicating with the other. Absence of lines between nodes denotes an absence of duplex (two-way) communication between them. More information on viewing the diagrams appearing in this document is given in a footnote below.[1]

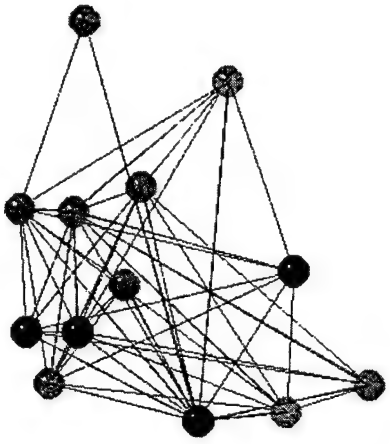


Figure 1. Complete CIR network. CIR staff sub-groups are shown as black spheres; student groups are shown as gray spheres.

"Connectedness" of sub-groups. To quantify a sub-group's level of connection to others within the network, this pilot project used a measure called *network degree*, which is calculated by summing the connections that the sub-group has to others in the network. Across all 13 sub-groups, the network degree mean was 7.54 connections, with a standard deviation of 2.67. The best-connected sub-group within the CIR network was the instructor sub-group, which (not surprisingly) shared connection which all others, as shown in the graphic below.

[1] The images throughout this report were created in Mage (Richardson and Richardson, 2002), a three-dimensional rendering program. Unfortunately, information on depth is lost when these three-dimensional graphics are rendered in two dimensions. This means that some nodes are actually farther apart than they appear to be in the two-dimensional graphics. This leads to an obvious question about the meaning of distance in the diagrams: when a node is distant from the diagram's center, its connections tend to be to other less-connected nodes.

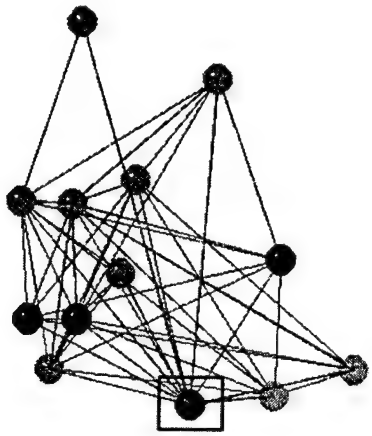


Figure 2. Complete network of CIR sub-groups. Box highlights most connected sub-group, CIR instructors.

Likewise, it is interesting to identify those sub-groups sharing fewer numbers of connections than is typical of the social network. Figure 3 highlights sub-groups with half of a standard deviation fewer connections than the mean:[2]

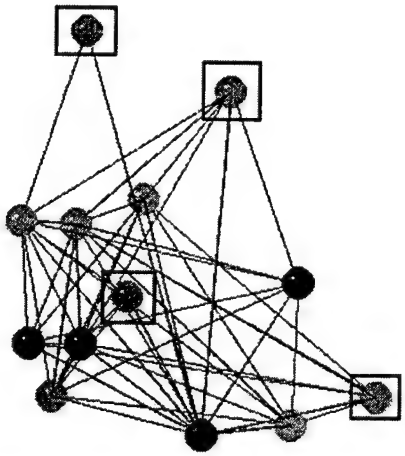


Figure 3. Boxed groups have .5 standard deviation fewer connections than mean.

While it is beyond the scope of this document to speculate on differences between the "connectedness" of student sub-groups, future work may find this a fruitful line of inquiry.

[2] Two-tenths of a standard deviation is typically used in educational research to describe a small effect, while one-half standard deviation is used to describe an effect of medium magnitude. Large effects are those of four-fifths of a standard deviation or more (Cohen, 1988).

The CIR delivers the majority of its educational offerings in Central America via the internet. Consequently, the provision of technical support is an important aspect of the social network. In Figure 4 below, the two sub-groups providing technical support highlighted. Their central position suggests that they shared connections to other highly-connected sub-groups.

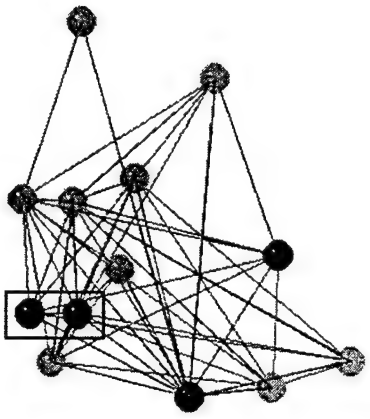


Figure 4. CIR Tech support groups (highlighted).

Findings: Individuals as Unit of Analysis

As with sub-groups, the *network degree* measure was used to quantify an individual's level of connection to the broader network. Of the 33 individuals participating in the CIR Central American program, the most central members, with centrality measures of 29 and 23, were both affiliated with CIR. This result is consistent with CIR's role as an information hub within the network.

Looking more broadly, the mean centrality score across network all members was 7.71 (with a standard deviation of 5.89). The magnitude of the standard deviation relative to the mean suggests that the degree of connectedness across the network was highly variable, a fact born out by visible inspection of the network.

CIR's network of individuals. Figure 7 below represents members of the CIR network as spherical nodes, with black nodes depicting CIR staff and gray nodes depicting students. As with the sub-group representations shown earlier, lines between the spheres represent communication pathways: both members connected by a line acknowledged sharing direct communicating with the other.

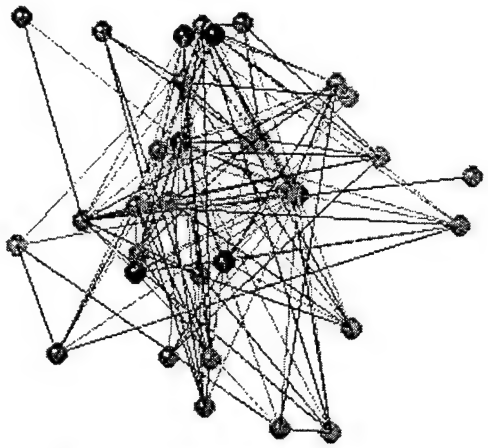


Figure 7. Black spheres represent CIR staff; gray nodes depict students.

Centralization in the social network. The large standard deviation in network degree relative to the mean suggests that some social network members are much better connected than others. In Figure 8 below, a black box is drawn around the area where the social network is most dense. Visual inspection suggests that CIR center staff, represented by black spheres, are disproportionately represented. Indeed, matrix analysis suggests that CIR staff hold about twice as many connections as would be expected given their numbers relative to total network size, accounting for 102 of 262 of the communication pathways, or about 39%. Chance alone would suggest that CIR staffers' share should be just 18%.

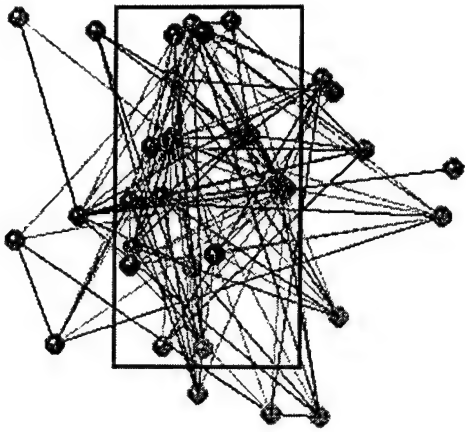


Figure 8. Complete network of individuals. Black spheres represent CIR staffers. The box encloses a dense part of the social network.

Social network without CIR. Concerning the centrality of CIR staff members to the social network, it is interesting to ask the following hypothetical question: what might the network look like in the absence of CIR staff members? For contrast, Figure 9 (below, left) shows the complete network, while Figure 10 (below, right) shows the network with CIR staff removed. Not surprisingly, the network appears to be much less dense in the latter:

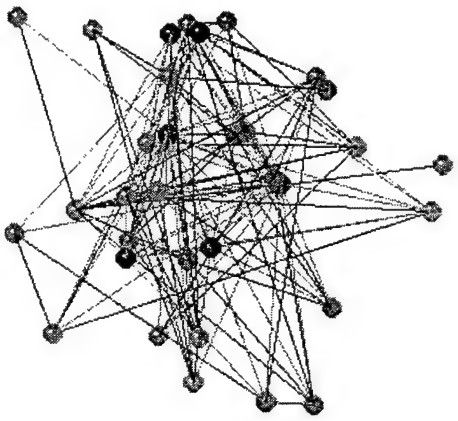


Figure 9. Complete network, with CIR members shown as black spheres, and students as gray.

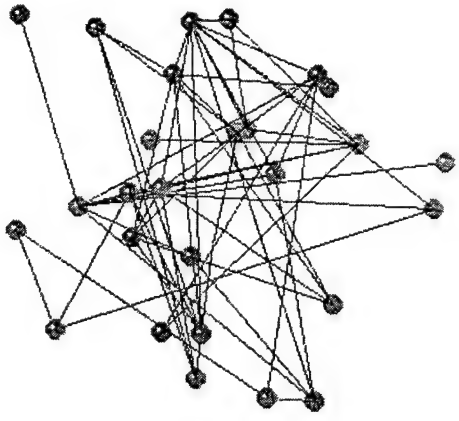


Figure 10. Network without CIR staff.

Isolated individuals. One of the most powerful aspects of the visual analysis of social network data is the opportunity it affords to identify isolates. Figure 11 below shows the entire network of individuals, with black spheres depicting CIR staff, and gray nodes representing students. In this view, five individuals have four or fewer connections (half of one standard deviation below the mean). One of these, on the far right of Figure 11, has but a single connection to the group. Figure 12 (below, right) removes CIR staffers, showing a sizeable increase in the number that would have sparse connections absent CIR involvement in the social network.

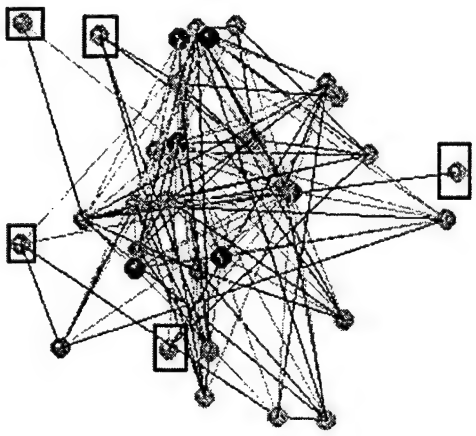


Figure 11. Complete network. Individuals with four or fewer connections are marked with boxes.

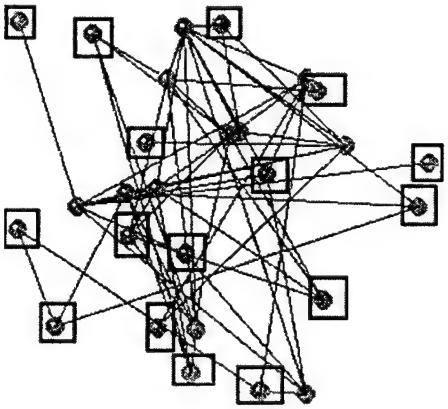


Figure 12. Network without CIR members. Individuals with four or fewer connections are marked with boxes.

Snapshots of the social network, in combination with information on performance, may be useful for managing aspects of the social network. As was shown in Figure 11 above, a number of individuals hold relatively few connections to the social network.

It is not necessarily a negative for a member of a social network to hold fewer connections than her peers. However, under situated theories of cognition, expertise is seen as developing through increasing levels participation in the work of a community of practice (Lave and Wenger, 1991; Rogoff, 1990). Therefore, in educational settings, instructors or others responsible for learning may wish to identify any low-performers who also happen to be isolated. As an example, Figure 13 below identifies the one student who was both poorly connected to the social network (half of a standard deviation below the mean) and a poor performer (class performance more than one standard deviation below the mean, as measured across written tests and performance evaluations).

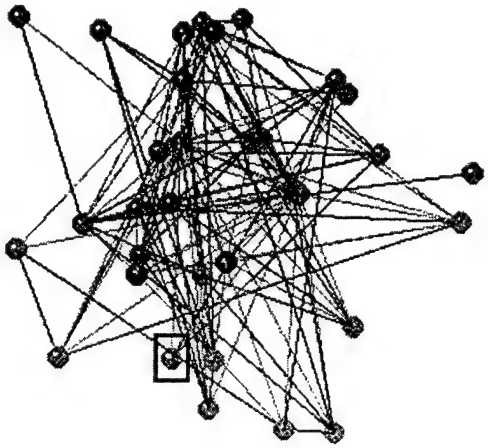


Figure 13. The highlighted individual is both poorly connected and a poor performer.

Conclusion

This pilot analyzed the social network within the Center for International Rehabilitation's Central American learning community at both the sub-group and individual units of analysis.

At the sub-group level of analysis, pilot data reinforce the notion that the Center's own staff is central to the network. Not surprisingly, the social network's most highly-connected sub-group was that of the CIR instructors. Technical support sub-groups were likewise highly connected. Additionally, the visualization techniques help identify sub-groups that are below certain thresholds for "connectedness," which may have future importance for managing the social network and the flow of information and resources through it.

Taking the individual as the unit of analysis, the pilot data suggest that that connectedness amongst individual members of the social network is highly variable. Communication pathways between CIR staff members and other highly connected individuals are particularly dense, while others appear to function at the periphery of the social network.

The techniques reported here may forecast what might happen to the social network in the absence of the CIR, and to provide help in identifying individuals who are simultaneously marginal members of the social network and poor performers.

Future Directions

Time series data. While this pilot has been both useful and informative to CIR leadership, subsequent explorations of social networks would benefit substantially from the collection of time-series data. Were surveys administered prior to, during and after a particular class offering, investigators could map the changes in the social network over

time, something that was not possible in this pilot. In addition to providing macro-level views of change, time-series data might prove useful to instructors, particularly if this helps to identify students who are performing poorly and who are isolated from the social network.

Refined measures of social capital. For future work, the way social capital was measured and analyzed may be improved in a number of ways.

First, the surveys contained questions regarding "friend of a friend" connections—those made by the individual respondent through an intermediary to others not in the immediate social network. This sort of connection is particularly interesting because it concretely identifies the creation of a new and potentially valuable pathway within the social network. Unfortunately, the data recovered these questions was of very low quality, and so was not analyzed. Since these questions track an important dimension of social capital, the payoff from improving the survey to better capture data is expected to be substantial.

Second, the current analysis is silent on the strengths of relationships among the respondents in the social network. Future work should address this issue by developing a means of measuring the strength of relationships within the network, analyzing these, and providing a means of visually representing these measures.

Automation of data collection and analysis. For this pilot project, students completed and submitted hard-copy survey forms. After the data was received, data was re-keyed into tables, converted into formats appropriate for machine analysis, and finally analyzed. Given the size of the group, the number of times the survey was administered, and that pilot status of the project, executing these operations "by hand" was reasonable. However, future projects should be mindful of scale issues and strongly consider the benefits of automating data collection and preliminary analyses. This is especially true if the data is to be used for managerial purposes, where timeliness is critical.

References

Brown, J.S & Duguid, P. (2000). The social life of information. Cambridge, MA: Harvard Business School Press.

Burt, R.S. (1992) Structural holes: The social structure of competition. Cambridge, MA: Harvard University Press.

Cohen, J. (1988). Statistical Power Analysis for the Behavioral Sciences Hillsdale, NJ, Lawrence Erlbaum Associates.

Cummings, J. (2002). Netvis [Computer software]. See http://www.netvis.org/.

Freeman, L.C. (1978-79). Centrality in social networks: Conceptual clarification. *Social Networks 1*, 215-239.

Freeman, L.C. (2000). Visualizing social structure. Journal of Social Structure 1(1), http://www2.heinz.cmu.edu/project/INSNA/joss/vsn.html

Fukuyama, F. (1999). Social capital and civil society. Paper presented at the IMF Conference of Second-Generation Reforms, http://www.imf.org/external/pubs/ft/seminar/1999/reforms/fukuyama.htm#I

Gentleman, R and Ihaka, R. (1997). R statistical environment [Computer software]. See http://www.r-project.org/.

Lave, Jean & E. Wenger (1991). Situated learning: legitimate peripheral participation. Cambridge: Cambridge University Press.

Microsoft Corp (2002). Excel 97 [Computer Software]. Redmond, WA.

Putnam, R. (2000). Bowling alone: The collapse and revival of American community. New York: Simon & Schuster.

Richardson, D.S. & Richardson, J.C. (2002). Mage 6.14. See http://kinemage.biochem.duke.edu/kinemage/kinemage.php.

Rogoff, B. (1990). Apprenticeship in thinking: cognitive development in social context. Oxford: Oxford University Press.

Wasserman, S. & Faust, K. (1994). Social network analysis: Methods and applications. Cambridge: Cambridge University Press.

How often did you use each of the following tools for the Transtibial/Transfemoral course?

	Never	*Monthly*	*Bi-weekly*	*Weekly*	*Daily*	*Number of responses*
Web browser to view CIR modules	0	0	1	10	12	23
Web browser to get information from websites outside CIR	7	7	3	4	2	23
Telephone (used for the course)	10	1	4	3	2	20
Email in WebCT	2	2	5	7	3	19
Email outside of WebCT	8	3	2	4	2	19
Bulletin board in WebCT	3	3	4	6	1	17
Acrobat Reader (to view PDF files)	7	3	2	6	0	18
Camera	15	0	1	0	0	16
Film Scanner	14	1	2	0	0	17
CIR CD with videos	8	8	3	1	0	20

From where did you use a computer for this course? (Check all that apply.) Total N=20

Location	*Number of students responding*
At my Center	15
At the cybercafe	9
At home	2
Other	1

CIR

CIR network participants:

As part of the evaluation of the Transtibial/Transfemoral Prosthetics course, the Center for International Rehabilitation is seeking to better understand the kind and amount of interaction among members of the network, and outside the network.

The following survey contains several questions. At the bottom of this page you are asked about how often you used various technology tools for your course. The question on the next page asks you to rate the frequency of contacts with other network members, and subsequent questions ask you to list "friend of friend" relationships, both inside and outside the CIR network.

Keep in mind that there are no right or wrong answers to these questions. Please answer them accurately and to the best of your ability, as your responses will help us improve the Center's offerings in the future. Your responses will be pooled with those of other respondents, and **will not** be shared with other students or mentors in the network.

Please complete the survey and return it to your exam proctor prior to leaving. Members of the CIR network not present at the final exam should return their surveys with the pre-stamped and addressed envelope included with their survey.

Thank you for your participation in the course and for the information provided through these survey materials. We hope you have enjoyed your experience.

How often did you use each of the following tools for the Transtibial/Transfemoral course?

	Never	Monthly	Bi-weekly	Weekly	Daily
Web browser to view CIR modules					
Web browser to get information from websites outside CIR					
Telephone (used for the course)					
Email in WebCT					
Email outside of WebCT					
Bulletin board in WebCT					
Acrobat Reader (to view PDF files)					
Camera					
Film Scanner					
CIR CD with videos					
Other technology used (please list)					

From where did you use a computer for this course? (Check all that apply.)
At my Center____ At the cybercafe____ At home____ Other____

How often do you have a personal contact with each of these CIR network members?

You have a personal contact if any of the following happens:

- You visit or a CIR network member visits you in person.
- You call or are called by a CIR network member on the telephone.
- You send email to an individual CIR network member or receive email directed to you alone.
- You send to or receive a personal letter from a CIR network member by mail.
- You engage another member of the CIR network or are engaged by another member of the CIR network in online chat or discussion.

The following DO NOT qualify as personal contacts:

- Email sent to you or from you as part of a group distribution list.
- Form-letters sent to you or from you via regular mail.

Please note: Mark only one category per person.

	Never	Monthly	Bi-weekly	Weekly	Daily
Hector Cassanova (I)					
Fred Navarette (A)					
Zane Edwards (A) tech support					
Roberto Lopez (A) tech support					
Mark Johnson (A)					
Josep Pocalles (A)					
Cesi Novoa (A)					
Esteban Barahona (N)					
Alejandro Ovando (N)					
Jose Marroquin (E)					
Julio Duarte (G)					
Mario Icasa (N)					
Rogue Ramirez (N)					
Freddy Ortega (N)					
Zayda Montenegro (N)					
Saul Castilo (N)					
Robert Moncada (N)					
Manuel Bonilla Rivas (E)					
Victor Granados (G)					
Fredy Valladores (E)					
Rene Estevez (E)					
Berta Garcia (G)					
Anibel Rivas (E)					
Jose Miranda (E)					
Luis Martinez (N)					
Francisco Menjivar (E)					
Alfredo Bonilla (E)					
Hugo Castilo (G)					
Mario Cerrato (N)					
Olga Monge de Quintanilla (E)					
Otto Sian (G)					
Cesar Acuna (G)					
Mario Garcia (E)					
Juan Ventura (E)					

(A)=Administration; (I)=Instructor; (E)=El Salvador; (G)=Guatemala; (N)=Nicaragua

Have the following CIR network members ever helped you establish a "friend of a friend" connection *within* the CIR network?

	Yes	No	If Yes, name and job/role of person
Hector Cassanova (I)			
Fred Navarette (A)			
Zane Edwards (A) tech support			
Roberto Lopez (A) tech support			
Mark Johnson (A)			
Josep Pocalles (A)			
Cesi Novoa (A)			
Esteban Barahona (N)			
Alejandro Ovando (N)			
Jose Marroquin (E)			
Julio Duarte (G)			
Mario Icasa (N)			
Rogue Ramirez (N)			
Freddy Ortega (N)			
Zayda Montenegro (N)			
Saul Castilo (N)			
Robert Moncada (N)			
Manuel Bonilla Rivas (E)			
Victor Granados (G)			
Fredy Valladores (E)			
Rene Estevez (E)			
Berta Garcia (G)			
Anibel Rivas (E)			
Jose Miranda (E)			
Luis Martinez (N)			
Francisco Menjivar (E)			
Alfredo Bonilla (E)			
Hugo Castilo (G)			
Mario Cerrato (N)			
Olga Monge de Quintanilla (E)			
Otto Sian (G)			
Cesar Acuna (G)			
Mario Garcia (E)			
Juan Ventura (E)			

(A)=Administration; (I)=Instructor; (E)=El Salvador; (G)=Guatemala; (N)=Nicaragua

Have the following CIR network members ever helped you establish a "friend of a friend" connection *outside* the CIR network?

	Yes	No	If Yes, name and job/role of person
Hector Cassanova (I)			
Fred Navarette (A)			
Zane Edwards (A) tech support			
Roberto Lopez (A) tech support			
Mark Johnson (A)			
Josep Pocalles (A)			
Cesi Novoa (A)			
Esteban Barahona (N)			
Alejandro Ovando (N)			
Jose Marroquin (E)			
Julio Duarte (G)			
Mario Icasa (N)			
Rogue Ramirez (N)			
Freddy Ortega (N)			
Zayda Montenegro (N)			
Saul Castilo (N)			
Robert Moncada (N)			
Manuel Bonilla Rivas (E)			
Victor Granados (G)			
Fredy Valladores (E)			
Rene Estevez (E)			
Berta Garcia (G)			
Anibel Rivas (E)			
Jose Miranda (E)			
Luis Martinez (N)			
Francisco Menjivar (E)			
Alfredo Bonilla (E)			
Hugo Castilo (G)			
Mario Cerrato (N)			
Olga Monge de Quintanilla (E)			
Otto Sian (G)			
Cesar Acuna (G)			
Mario Garcia (E)			
Juan Ventura (E)			

(A)=Administration; (I)=Instructor; (E)=El Salvador; (G)=Guatemala; (N)=Nicaragua

Center for International Rehabilitation
Annual Report to the Department of Defense
#DAMD17-00-1-0711
October 2002

Appendix H

REGISTRATION AND DEMOGRAPHICS

TODAY'S DATE MM DD YYYY / /	STUDY ID NUMBER	
CLINICIAN	PATIENT'S BIRTH DATE MM DD YYYY / /	PATIENT'S SEX ☐ M ☐ F

HEALTH HISTORY

GENERAL HEALTH ☐ Excellent ☐ Good ☐ Fair ☐ Poor

CURRENT WEIGHT _____ lbs. HEIGHT _____ m.

RECENT WEIGHT CHANGES? ☐ Gain ☐ Loss ☐ No change

How much gain or loss? _____

Year in which you had your initial amputation? _____

How many prostheses have you had since your initial amputation? _____

How many hours/day do you wear your primary prosthesis? _____

Was it from this clinic? ☐ Yes ☐ No

When was your last visit to this clinic for anything to do with your prosthesis? _____

If you've had any revisions please list the year(s) of those surgeries. _____

How long ago did you receive your last prosthesis? _____

Do you have a secondary prosthesis? ☐ Yes ☐ No

How many hours/day do you wear your secondary prosthesis? _____

RESOURCES

PAYOR SOURCE

☐ Self/Family ☐ Insurance ☐ Military ☐ Free care

IS THE PATIENT THE PRIMARY WAGE EARNER?

☐ Yes ☐ No

HOW MANY IN YOUR HOUSEHOLD ARE WAGE EARNERS? _____

WHAT IS THE TOTAL MONTHLY INCOME OF YOUR HOUSEHOLD?

$_____

HOW MANY PEOPLE ARE IN YOUR HOUSEHOLD? _____

CURRENT LIVING SITUATION (Check all that apply)

☐ Alone ☐ With friends
☐ Spouse/companion ☐ With children
☐ With parents ☐ Attendant
☐ Other family/relatives ☐ Other _____

CURRENT LIVING ENVIRONMENT

☐ City/urban ☐ Dry rural ☐ Wet rural
☐ Mountain area ☐ Sea/ocean side

CLINIC ACCESS

How many hours did it take you to travel to this clinic? _____

How many days will you be away from home for this visit? _____

How many kms is it from your home to this clinic? _____

How much will you spend on transportation, food, and lodging for this visit? _____

CURRENT VOCATIONAL CATEGORY (Check all that apply)

☐ Employed full-time ☐ Employed part-time ☐ Unemployed ☐ Self employed
☐ Student full-time ☐ Student part-time ☐ Homemaker
☐ On leave of absence ☐ On disability ☐ Retired due to age

EDUCATIONAL LEVEL (Check highest level completed)

☐ 0 – 12th grade (indicate grade completed) _____
☐ Associate degree/Technical training ☐ Bachelors degree
☐ Masters degree ☐ PhD

Can you read and write in your native language? ☐ Yes ☐ No

☐ Admission ☐ 30 day follow-up ☐ 3 - 6 month follow-up ☐ Other	TODAY'S DATE MM / DD / YYYY	STUDY ID NUMBER

LOWER EXTREMITY FUNCTIONAL STATUS

I. Do you use any assistive devices?
(Check all that apply)

- ☐ Walker
- ☐ Axillary crutches
- ☐ Forearm crutches
- ☐ Wheelchair or scooter
- ☐ One cane
- ☐ Two canes
- ☐ Other_____
  _____

II. Please indicate your affected limb(s).

☐ Left leg ☐ Right leg ☐ Both legs

III. How many hours per day do you currently wear your prosthesis?

_____ hours/per day

IV. Using the scale to the right, please indicate how easily you perform the following activities.

1. Very easy
2. Easy
3. Slightly difficult
4. Very difficult
5. Cannot perform activity

NA Not applicable

	1	2	3	4	5	NA	IV. Do you usually perform this activity using or not using your prosthesis? Using	Not Using
1. Get into and out of tub or shower	☐	☐	☐	☐	☐	☐	☐	☐
2. Take shower	☐	☐	☐	☐	☐	☐	☐	☐
3. Dress lower body	☐	☐	☐	☐	☐	☐	☐	☐
4. Get on and off toilet	☐	☐	☐	☐	☐	☐	☐	☐
5. Use the toilet	☐	☐	☐	☐	☐	☐	☐	☐
6. Get up from floor	☐	☐	☐	☐	☐	☐	☐	☐
7. Balance while standing	☐	☐	☐	☐	☐	☐	☐	☐
8. Stand one-half hour	☐	☐	☐	☐	☐	☐	☐	☐
9. Pick up an object from floor while standing	☐	☐	☐	☐	☐	☐	☐	☐
10. Get up from a chair	☐	☐	☐	☐	☐	☐	☐	☐
11. Get into and out of a car	☐	☐	☐	☐	☐	☐	☐	☐
12. Walk in-doors	☐	☐	☐	☐	☐	☐	☐	☐
13. Walk out-doors on uneven ground	☐	☐	☐	☐	☐	☐	☐	☐
14. Walk out-doors in bad weather (e.g., rain, snow, wind)	☐	☐	☐	☐	☐	☐	☐	☐
15. Walk up to two hours	☐	☐	☐	☐	☐	☐	☐	☐
16. Walk up steep ramp	☐	☐	☐	☐	☐	☐	☐	☐
17. Get on and off a bus	☐	☐	☐	☐	☐	☐	☐	☐
18. Climb one flight of stairs with rail	☐	☐	☐	☐	☐	☐	☐	☐
19. Climb one flight of stairs without rail	☐	☐	☐	☐	☐	☐	☐	☐
20. Run half a kilometer	☐	☐	☐	☐	☐	☐	☐	☐
21. Carry a plate of food while walking	☐	☐	☐	☐	☐	☐	☐	☐
22. Put on and take off prosthesis	☐	☐	☐	☐	☐	☐	NA	NA

☐ Admission ☐ 30 day follow-up ☐ 3 - 6 month follow-up ☐ Other	TODAY'S DATE MM DD YYYY / /	STUDY ID NUMBER

HEALTH RELATED QUALITY OF LIFE

I. Please check the box in the column indicating your best response to the question.

Note: The term "physical condition" refers to the reason you use a prosthesis.

	Not At All 1	Slightly 2	Somewhat 3	Quite a bit 4	Extremely 5
1. How much do you keep to yourself to avoid the reactions of others to your use of a prosthesis?	☐	☐	☐	☐	☐
2. To what extent are you insulted by the attitudes of other people towards your physical condition?	☐	☐	☐	☐	☐
3. To what extent are you prevented from doing what you would like to do because of social attitudes, the law, or environmental barriers?	☐	☐	☐	☐	☐
4. How much does pain interfere with your activities (including both work outside the home and household duties)?	☐	☐	☐	☐	☐
5. To what extent do you accomplish less than you would like because of your physical condition?	☐	☐	☐	☐	☐
6. To what extent do you accomplish less than you would like because of emotional problems?	☐	☐	☐	☐	☐
7. How much does your physical condition restrict your ability to run errands?	☐	☐	☐	☐	☐
8. How much does your physical condition restrict your ability to pursue a hobby?	☐	☐	☐	☐	☐
9. How much does your physical condition restrict your ability to do chores?	☐	☐	☐	☐	☐
10. How much does your physical condition restrict your ability to do paid work?	☐	☐	☐	☐	☐
11. To what extent have you cut down on work or other activities because of your physical condition?	☐	☐	☐	☐	☐
12. To what extent have you cut down on work or other activities because of emotional problems?	☐	☐	☐	☐	☐

How often during the past week...	All of the Time 1	Most of the Time 2	Some of the Time 3	A Little of the Time 4	None of the Time 5
13. did you feel full of life?	☐	☐	☐	☐	☐
14. have you felt calm and peaceful?	☐	☐	☐	☐	☐
15. did you have a lot of energy?	☐	☐	☐	☐	☐
16. have you been happy?	☐	☐	☐	☐	☐

How often during the past week...	All of the Time 1	Most of the Time 2	Some of the Time 3	A Little of the Time 4	None of the Time 5
17. have you been very nervous?	☐	☐	☐	☐	☐
18. have you felt so down in the dumps that nothing could cheer you up?	☐	☐	☐	☐	☐
19. have you felt downhearted and depressed?	☐	☐	☐	☐	☐
20. did you feel worn out?	☐	☐	☐	☐	☐
21. did you feel tired?	☐	☐	☐	☐	☐
22. were you easily bothered or upset?	☐	☐	☐	☐	☐
23. did you have difficulty concentrating or paying attention?	☐	☐	☐	☐	☐

II. Please answer the following questions about work or school.

1. I am employed		☐ Full time	☐ Part time	☐ Not employed
2. I am attending school		☐ Full time	☐ Part time	☐ Not enrolled
3. I am currently receiving care from a...	Doctor	☐ Yes		☐ No
	Physical therapist	☐ Yes		☐ No
	Occupational therapist	☐ Yes		☐ No

CLINICIAN	TODAY'S DATE MM DD YYYY / /	STUDY ID NUMBER

LOWER EXTREMITY PROSTHETICS INITIAL ASSESSMENT

PRIMARY ETIOLOGY (Check all that apply)

TRAUMA
- ☐ Automobile crash
- ☐ Pedestrian
- ☐ Motorcycle crash
- ☐ Machinery/Farm injury
- ☐ Bullet injury
- ☐ Animal bite
- ☐ Land mine injury (See classification below)
- ☐ Grenade
- ☐ Burn
- ☐ Other _____

DISEASE
- ☐ Diabetes
- ☐ Peripheral vascular disease
- ☐ Infection
- ☐ Cancer
- ☐ Gangrene/poor healing
- ☐ Other _____

OTHER
- ☐ Congenital limb deficiency
- ☐ Other _____

LEVEL OF AMPUTATION/LIMB DEFICIENCY
(Check all that apply)

Left		Right
☐	Partial foot	☐
☐	Syme's	☐
☐	Transtibial	☐
☐	Knee disarticulation	☐
☐	Transfemoral	☐
☐	Hip disarticulation	☐
☐	Hemi-pelvectomy	☐

CLASSIFICATION OF LAND MINE INJURIES (does not include bullets or grenades)

Did patient receive other injury besides lower extremity amputation(s)? ☐ Yes ☐ No

If yes, please indicate other injuries:

- ☐ Upper extremity amputation
  - ☐ Hand ☐ Left ☐ Right
  - ☐ Arm ☐ Left ☐ Right
- ☐ Vision/eyes
- ☐ Hearing
- ☐ Blast injuries, shrapnel, burns
  - ☐ Residual limb
  - ☐ Contralateral limb
  - ☐ Groin
  - ☐ Other _____
  - ☐ Abdomen
  - ☐ Arm
  - ☐ Face

DATE OF INJURY
MM DD YYYY
/ /

MOST RECENT SURGERY
MM DD YYYY
/ /

Describe: _____

OTHER EXTREMITIES AFFECTED? ☐ Yes ☐ No
If yes, please describe.

PREVIOUS USE OF A PROSTHESIS? ☐ Yes ☐ No
If yes, please describe.

FUNCTIONAL LEVELS

PRE-MORBID LEVEL	CURRENT LEVEL	PATIENT'S FUNCTIONAL GOAL
☐ (K0) – Non-ambulatory	☐ (K0)	☐ (K0)
☐ (K1) – Household ambulator (level surfaces, fixed cadence)	☐ (K1)	☐ (K1)
☐ (K2) – Limited community ambulator (uneven surfaces, low barriers)	☐ (K2)	☐ (K2)
☐ (K3) – Community ambulator (variable cadence, most barriers)	☐ (K3)	☐ (K3)
☐ (K4) – High performance user (active child/ adult)	☐ (K4)	☐ (K4)

CLINICIAN	TODAY'S DATE MM DD YYYY / /	STUDY ID NUMBER

ASSISTIVE DEVICES

PRE-MORBID DEVICES USED
(Check all that apply)

- ☐ Walker
- ☐ Wheelchair or scooter
- ☐ Axillary crutches
- ☐ Forearm crutches
- ☐ One cane
- ☐ Two canes
- ☐ Other _____

DEVICES CURRENTLY USED
(Check all that apply)

- ☐ Walker
- ☐ Wheelchair or scooter
- ☐ Axillary crutches
- ☐ Forearm crutches
- ☐ One cane
- ☐ Two canes
- ☐ Other _____

What is your usual mode of transportation?

_____
_____
_____

How long or how far can you walk before needing to rest?

_____
_____
_____

TREATMENT PLAN

(Check all that apply)

PROSTHESIS

- ☐ Left
- ☐ Right
- ☐ TTA
- ☐ TFA
- ☐ Initial residual limb management with shrinker or rigid removable dressing
- ☐ Consult with prescribing MD
- ☐ Consult with patient's PT

COMPONENTS

- ☐ Endoskeletal
- ☐ Exoskeletal
- ☐ Other _____

Foot _____
Ankle _____
Pylon _____
Socket _____
Knee _____
Suspension _____
Liner _____
Socks _____

ADDITIONAL NOTES

CLINICIAN	TODAY'S DATE MM DD YYYY / /	STUDY ID NUMBER

LOWER EXTREMITY PROSTHETICS PROGRESS NOTE

TYPE OF VISIT

- ☐ Fitting
- ☐ Delivery (See delivery status below)
- ☐ Routine follow-up
- ☐ Client requested repair/replacement (Indicate reason)
- ☐ Medical - non-prosthetic problem

REASON FOR REPAIR/REPLACEMENT

- ☐ New prescription
- ☐ Fit/comfort
- ☐ Foot problem
- ☐ Suspension problem
- ☐ Other structural problem

FUNCTIONAL STATUS

Current Weight _____ lbs. Height _____ m.

Recent weight changes? ☐ Gain ☐ Loss ☐ No change

How much gain or loss? _____

Number and ply of prosthetic socks worn? _____

CURRENT FUNCTIONAL LEVEL

- ☐ (K0) – Non-ambulatory
- ☐ (K1) – Household ambulator (level surfaces, fixed cadence)
- ☐ (K2) – Limited community ambulator (uneven surfaces, low barriers)
- ☐ (K3) – Community ambulator (variable cadence, most barriers)
- ☐ (K4) – High performance user (child/active adult)

PATIENT'S LEVEL OF INDEPENDENCE FOR AMBULATION

- ☐ Independent
- ☐ Min assistance - one cane or crutch
- ☐ Mod assistance - two canes or crutches
- ☐ Max assistance - walker
- ☐ Unable to ambulate

DOES CURRENT DEVICE MEET CLIENT'S NEEDS?

- ☐ Yes
- ☐ No

If not, please describe necessary modifications_____

_____

_____

_____

DELIVERY STATUS

PATIENT EDUCATION

Patient is physically able to don and doff prosthesis.	☐ YES	☐ NO
Patient can don and doff prosthesis correctly.	☐ YES	☐ NO
Patient has been instructed in proper skin care.	☐ YES	☐ NO
Patient has been instructed in proper socket care.	☐ YES	☐ NO
Patient understands the use and care of socks for proper socket fit.	☐ YES	☐ NO

INDIVIDUAL(S) INSTRUCTED

☐ Patient ☐ Family member
☐ Nurse ☐ Therapist
☐ Other _____

PROSTHETIC TRAINING

Is patient receiving physical therapy?	☐ YES	☐ NO

Were any modifications/adjustments made during this patient visit? ☐ YES ☐ NO

If yes, briefly describe. _____

_____

Will further modifications/adjustments be necessary before final delivery? ☐ YES ☐ NO

If yes, briefly describe. _____

_____

Estimated minutes clinician spent with the patient during this visit. _____

Estimated minutes clinician and/or technician spent making modifications during this visit. _____

☐ Delivery ☐ 30 day follow-up ☐ 3 - 6 month follow-up ☐ Other	TODAY'S DATE MM DD YYYY / /	STUDY ID NUMBER

FOLLOW-UP EVALUATION OF CLINIC SERVICES

Please help us improve the services at our clinic by answering the following questions.

I. Thinking about your prosthesis, how true are the following statements for you?

	Strongly Agree	Agree	Disagree	Strongly Disagree
1. My prosthesis fits well.	☐	☐	☐	☐
2. The weight of my prosthesis is manageable.	☐	☐	☐	☐
3. My prosthesis is comfortable throughout the day.	☐	☐	☐	☐
4. It is easy to put on my prosthesis.	☐	☐	☐	☐
5. My prosthesis looks good.	☐	☐	☐	☐
6. My prosthesis is durable.	☐	☐	☐	☐
7. My clothes are free of wear and tear from my prosthesis.	☐	☐	☐	☐
8. My skin is free of abrasions and irritations.	☐	☐	☐	☐
9. My prosthesis is pain free to wear.	☐	☐	☐	☐
10. I can afford the out-of-pocket expenses to purchase and maintain my prosthesis.	☐	☐	☐	☐
11. I can afford to repair or replace my prosthesis as needed.	☐	☐	☐	☐

II. Thinking about the services you received, how true are the following statements?

	Strongly Agree	Agree	Disagree	Strongly Disagree
1. I received an appointment with a prosthetist within a reasonable amount of time.	☐	☐	☐	☐
2. I was shown the proper level of courtesy and respect by the staff.	☐	☐	☐	☐
3. I waited a reasonable amount of time to be seen.	☐	☐	☐	☐
4. Clinic staff fully informed me about equipment choices.	☐	☐	☐	☐
5. The prosthetist gave me the opportunity to express my concerns regarding my equipment.	☐	☐	☐	☐
6. The prosthetist was responsive to my concerns and questions.	☐	☐	☐	☐
7. I am satisfied with the training I received in the use and maintenance of my prosthesis.	☐	☐	☐	☐
8. The prosthetist discussed problems I might encounter with my equipment.	☐	☐	☐	☐
9. The staff coordinated their services with my therapists and doctors.	☐	☐	☐	☐
10. I was a partner in decision-making with clinic staff regarding my care and equipment.	☐	☐	☐	☐

III. Since receiving your device, has any maintenance been necessary ? ☐ Yes ☐ No

If yes, please explain:

_____

_____

Any additional comments are welcome:

_____

_____

_____

_____

Center for International Rehabilitation
Annual Report to the Department of Defense
#DAMD17-00-1-0711
October 2002

Appendix I

Plan de Acción
Entre
El Centro para la Rehabilitación Internaciónal (CIR)
Y
La Fundación Teletón Pro-Rehabilitación (FUNTER)

Antecedentes

El siguiente es un plan de acción segun lo asignado por mandato de la carta de entendimiento entre el El Centro para la Rehabilitación Internaciónal y La Fundación Teletón Pro-Rehabilitación firmado por ambas partes en Febrero de 2002.

El objetivo es establecer entre el CIR y FUNTER un plan de acción y colaboración en el desarrollo de programas de rehabilitación y políticas necesarias para asegurar la completa igualdad para las personas con discapacidades en la región centroamericana.

Duración

El siguiente plan de acción incluye un período de 12 meses, comenzando el 1 de Febrero de 2002.

Contenidos

El siguiente es un plan de trabajo común para alcanzar los objetivos establecidos en la carta de entendimiento:

1. Establecer una oficina regional para que CIR pueda coordinar actividades regionales, incluyendo el contratar personal y proporcionar espacio de oficina, apoyo logístico y administrativo.

Plan de Trabajo:

- Comenzando en Febrero de 2002, FUNTER proporcionará servicios y recursos administrativos y soporte

Action Plan

The Center for International Rehabilitation (CIR)
&
The Telethon Foundation Pro-Rehabilitation (FUNTER)

Background

The following is an action plan as mandated by the Memorandum of Understanding between the Center for International Rehabilitation and the Telethon Foundation Pro-Rehabilitation (FUNTER), signed by both parties on February 2002.

The objective is to establish between the CIR and FUNTER a collaborative plan of action to develop rehabilitation programs, and policies necessary to insure full equality of opportunity for people with disabilities in the Central American region.

Term

The following action plan covers a 12-month time period, beginning February 1, 2002.

Plan Contents

The following is a common work plan for achieving the objectives established in the MOU:

2. Establish a regional office for the CIR to coordinate these activities, including hiring staff and providing office space, administrative and logistical support.

Work Plan:

- February 2002 - FUNTER will provide administrative services, facilities and other logistical support to the CIR to facilitate the implementation of the activities, including assistance with the

logístico al CIR para facilitar la implementación de las actividades, incluyendo la asistencia en la contratación y manejo de personal. Esto incluye:

- ◊ Ayudar a CIR identificar los candidatos en el proceso de emplear a través de anuncios de empleo y referencias de candidatos
- ◊ Procesar el personal contratado, incluyendo la documentación inicial y su seguimiento según los requisitos de regulación del gobierno municipal y nacional. Clasificación de las formas y de los procedimientos de impuesto necesarios
- ◊ Administración periódica de la nómina de pago del personal y beneficios a través de los sistemas administrativos existentes de FUNTER
- ◊ Establecimiento de una cuenta dedicada al CIR/Chicago para los desembolsos a los subcontratistas y a los vendedores.
- ◊ Los sueldos del personal del CIR serán pagados de esta cuenta.
- ◊ Disposición de espacio de oficina necesario para el personal del CIR para las actividades diarias.
- ◊ Disposición de software para uso del personal de CIR según lo necesitado para las activiades diarias y monitoreo de programas, incluyendo software contable.
- ◊ Acceso por el personal del CIR al equipo e infrastructura de oficina de FUNTER, incluyendo la maquina fotocopiadora, a la red de computadoras y a los sistemas de teléfono.

- El CIR reembolsará para estos gastos de arriba $350.00 por mes por persona

hiring and processing of staff. This includes:

- ◊ Assisting CIR to identify candidates in the hiring process through job postings and candidate referrals
- ◊ Processing hired staff, including initial and ongoing filing of documentation as required by municipal and national government regulations. Filing of required tax forms.
- ◊ Ongoing administration of staff payroll and benefits through existing FUNTER administrative systems
- ◊ Establishment of a dedicated CIR account for CIR fund deposits and for disbursements to subcontractors and vendors
- ◊ CIR Staff payroll will be pay from this account.
- ◊ Provision of office space required for CIR staff daily activities.
- ◊ Provision of computer software for use by CIR staff as needed for daily activities and program tracking including accounting software.
- ◊ Access by CIR staff to FUNTER office equipment and infrastructure, including copying machines, computer networks and telephone systems.

- The CIR will reimburse FUNTER for these overhead expenses $350.00 a month per person hired during that

empleada durante ese mes

2. Evaluar la Calidad de los servicios que el Centro de Rehabilitación Integral (CRI) de FUNTER actualmente esta ofreciendo con énfasis en las instalaciones Ortésicas y Protésicas, según lo requiera la Fundación.

Plan de Trabajo:

- 1 de Marzo 2002, CIR espera contratar un Protesista y Ortesista Categoría II que esté basado en FUNTER. El profesional estará disponible para proporcionar asistencia técnica limitada y ayudar en el desarrollo de un plan para evaluar la calidad de los servicios que están proporcionando actualmente.
- El personal del CIR ubicado en Chicago, proporcionará conocimiento técnico y supervisará y realizará talleres de Prótesis/Ortésis en las instalaciones de FUNTER como parte de las actividades programáticas del CIR:
  - ◊ 15 de Marzo 2002 - Técnicas de fabricación de Socket
  - ◊ March 2002 - Otros tópico a ser determinados por CIR/FUNTER

3. Establecer un mecanismo para realizar evaluaciones de campo de la tecnología y de los programas protésicos que actualmente se están desarrollando bajo auspicio del CIR.

Plan de Trabajo:

- Abril 2002 - CIR desarrollará protocolos para tecnologías y técnicas de evaluación de campo que actualmente se están desarrollando bajo el auspicio del CIR y proporcionará entrenamiento al personal de FUNTER sobre su uso.

month.

3. Assess the quality of services currently offered by FUNTER's Centro de Rehabilitación Integral (CRI) with emphasis in the Prosthetic and Orthotic facility, as requested by FUNTER

Work Plan:

- March 1, 2002 - CIR expects to hire a Category II Prosthetist & Orthotist, who will be based at FUNTER. The professional will be available to provide limited technical assistance and to help in the development of a plan to assess the quality of services currently provided.
- Chicago-based CIR staff will also provide technical assistance and will supervise and hold P/O workshops at the FUNTER facility as part of CIR programmatic activities:
  - ◊ March 15, 2002 Socket fabrication techniques
  - ◊ March 2002 Other topics TBD by CIR/FUNTER

4. Establish a mechanism to field test prosthetic technology and programs currently being developed under the auspices of the CIR

Work Plan:

- April 2002 - The CIR will develop protocols for field testing technologies and techniques currently being developed under the auspices of the CIR, and will provide training to FUNTER staff on their use.
- FUNTER will conduct clinical field

- FUNTER conducirá pruebas clínicas en de campo de los productos y programas desarrollados bajo el auspicio del CIR.
  - ◊ Junio – Dic. 2002. Técnicas de fabricación de sockets protésicos.
  - ◊ Junio – Dic. 2002. Sistema de alineamiento esquelético y monolimb.
  - ◊ Agosto – Octubre 2002. Pié protésico (Roll Over Shape)

4. Proporcionar educación contínua a los profesionales de la rehabilitación incluyendo protesistas.

Plan de Trabajo:

- A partir de febrero a junio del 2002, el personal de FUNTER continuará participando en el programa experimental de educación a distancia de CIR que se espera sea terminado en la primavera. Además, el personal de FUNTER será incluido en programas educativos adicionales según lo juzgado apropiado por ambas partes.
- Abril 2002 – CIR/FUNTER identificarán tópicos para conferencias / talleres para ser presentados en fechas específicas.

5. Proporcionar acceso a programas y productos desarrollados por CIR tales como el Directorio Regional de Recursos en Rehabilitación en línea, Medición de Resultados y el Modelo Económico.

Plan de Trabajo:

- Abril 2002, el CIR desarrollará un "protocolo de prueba" y proveerá adiestramiento en el uso y aplicación de Formas para la Medición de Resultados.
- June 2002 – CIR will submit the trials of products and programs developed under the auspices of the CIR.
  - ◊ June - Dec 2002 Prosthetic socket fabrication techniques
  - ◊ June - Dec , 2002 Skeletal Alignment System & Monolimb
  - ◊ August – Oct. 2002 Prosthetic Feet (Roll Over Shape)

5. Provide continuing education for rehabilitation professionals including prosthetists

Work Plan:

- February – June 2002 - FUNTER staff will continue to participate in the CIR Distance Learning pilot program, which is expected to be completed in the Spring. FUNTER staff will also be included in additional follow-on educational programs, as deemed appropriate by both parties.
- April 2002 – CIR / FUNTER will identify topics for lectures / workshops to be presented and the specific dates

6. Provide access to programs and products developed by the CIR such as the on-line Directory of Rehabilitation Resources, Outcome Measures and the Economic Model

Work Plan:

- April 2002 – CIR will develop testing protocol and will provide training on the use of the Outcome Measure Tools.
- June 2002 – CIR will submit the

results of an evaluation of the programs under this initiative and report these findings to all involved partners, including FUNTER staff.

- Mayo – Julio 2002 – CIR desarrollará un "protocolo de prueba" y proveerá adiestramiento en su uso y aplicación del "Modelo Prostético Económico"
- En diciembre 2002, el CIR producirá un reporte anual sobre sus actividades.

results of an evaluation of the programs under this initiative and report these findings to all involved partners, including FUNTER staff.

- May to July, 2002 - CIR will develop a "testing protocol" and will provide training on the use and application of the "Prosthetic Economic Modeling".
- December 2002 - The CIR will produce an annual report

Disposiciones generales

Cada organización asignará a un oficial de enlace que será su representante designado con respecto a la implementación y manejo de este Plan de Acción.

El Oficial de enlace para el Centro de Rehabilitación Internaciónal es:

Hector Casanova
351 E., Huron, 2nd Floor Annex
Chicago, Illinois, 60611,
Tel. (312) 926-0018,
Fax (312) 926-7662
E-mail: h-casanova@nwu.edu.

El Oficial de enlace para la Fundación Teletón Pro-Rehabilitación es:

Maria Dolores de Nobbs
Calle El Pedregal Y Ave. L – E
Hardines de la Hacienda
Ciudad Merliot, Antiguo Cuscatlán
Tel. 289-0431
Fax. 289-0432
E-mail: funter98@hotmail.com

Cambios a este plan de trabajo requiere la concurrencia escrita de ambas partes según representado por los individuos identificados abajo.

General Provisions

Each Party will appoint a liaison officer who will serve as its designated representative in regard to the implementation and management of this Action Plan.

The liaison officer for the Center for International Rehabilitation is:

Hector Casanova
351 E., Huron, 2nd Floor Annex
Chicago, Illinois, 60611,
Tel. (312) 926-0018,
Fax (312) 926-7662
E-mail: h-casanova@nwu.edu.

The liaison officer for the Telethon Foundation Pro-Rehabilitation is:

Maria Dolores de Nobbs
Calle El Pedregal Y Ave. L – E
Hardines de la Hacienda
Ciudad Merliot, Antiguo Cuscotlan
Tel. 289-0431
Fax. 289-0432
E-mail: funter98@hotmail.com

Changes to this work plan requires the written concurrence of both parties as represented by the individuals identified below.

In witness whereof, the undersigned, being duly

Como testigo del mismo, el suscrito, siendo plenamente autorizado para tal efecto, firma este Acuerdo en San Salvador, El Salvador el _____ en dos originales, versión en inglés y español. En caso de interpretar el contenido, la versión en inglés será usada como referencia.

authorized to that effect, sign this Agreement in San Salvador, El Salvador on the _____ in two originals, Spanish and English versions. In case of a contradiction, the English version shall prevail.

Por parte del Centro de Rehabilitación Internacional:

Fred Navarrete
Coordinador Regional
Centro para la Rehabilitación Internaciónal

On behalf of the Center for International Rehabilitation:

Fred Navarrete
Regional Coordinator
Center for International Rehabilitation

Por parte de la Fundación Teletón Pro-Rehabilitación:

Lic. Maria Dolores de Nobs
Directora Ejecutiva
Fundación Teletón Pro-Rehabilitación

On behalf of the Telethon Foundation Pro-Rehabilitation:

Lic. Maria Dolores de Nobs
Executive Director
Telethon Foundation Pro-Rehabilitation

Center for International Rehabilitation
Annual Report to the Department of Defense
#DAMD17-00-1-0711
October 2002

Appendix J

ACUERDO

ESTE ACUERDO ("Acuerdo") se realiza y entra en vigencia el 15 de Julio de 2002 por y entre el CENTRO PARA LA REHABILITACIÓN INTERNACIONAL, una corporación no lucrativa de Illinois ("CIR"), y el Asociación Teletón Pro Rehabilitación FUNTER ("Contratista").

ATESTIGUA:

POR CUANTO, CIR desea involucrar al Contratista para prestar servicios a CIR.

POR CUANTO, CIR y Contratista desean entrar en este Acuerdo para establecer las condiciones del compromiso del Contratista por CIR.

POR LO TANTO, de conformidad con lo anterior y en consideración a los pactos mútuos de obligación y promesas contenidos aquí, y a otra buena y valiosa consideración, la recepción de lo cual se está reconociendo por la presente, ambas partes están de acuerdo en lo siguiente:

1. Compromiso. CIR por medio de la presente compromete al Contratista como un contratista independiente para prestar servicios a CIR en conexión con el Compromiso, como se describe a profundidad en el Plan del Proyecto adjunto. Firmando abajo, el Contratista acepta el Compromiso de CIR conforme las condiciones y términos detallados en el Plan de Proyecto adjunto aquí dentro establecido.

2. Período. El período inicial del Compromiso deberá ser de 15 de Julio de 2002 a 15 de Julio de 2003. Al final del período Inicial, ambas partes podrán, bajo mutuo acuerdo, y anuentes a una enmienda escrita de este Acuerdo, extender el período de allí en adelante a un periodo de tiempo acordado. Los términos de este acuerdo deberán gobernar cualquier dicha extensión del Período Inicial, a menos de que ambas partes estén de acuerdo por escrito.

3. Cuotas del Contratista. El CIR deberá pagar al Contratista $40 por paciente participante por los servicios realizados por el Contratista durante el Período Inicial del Acuerdo. Los términos y forma de pago se detallan en el Plan de Proyecto adjunto.

4. Propiedad Intelectual.
a) El Contratista reconoce y está de acuerdo que los archivos del CIR y otros documentos, discos de computación, cintas o cualquier otro medio de comunicación electrónico o físico ("Documentos")

AGREEMENT

THIS AGREEMENT ("Agreement") is entered into as of July 15th, 2002 by and between the CENTER FOR INTERNATIONAL REHABILITATION, an Illinois not for profit corporation ("CIR"), and Asociación Teletón Pro Rehabilitación FUNTER ("Contractor").

WITNESSETH:

WHEREAS, CIR desires to engage Contractor to render services to the CIR.

WHEREAS, CIR and Contractor desire to enter into this Agreement to set forth the terms of the engagement of Contractor by CIR.

NOW, THEREFORE, in reliance on the foregoing and in consideration of the mutual covenants and promises contained herein, and other good and valuable consideration, the receipt of which is hereby acknowledged, the parties agree as follows:

1. Engagement. CIR hereby engages Contractor as an independent contractor to render services to CIR in connection with the Engagement, as further described in the attached Project Plan. By signing below, Contractor hereby accepts the Engagement by CIR upon the terms and conditions detailed in the attached Project Plan and herein set forth.

2. Term. The initial term of the Engagement shall be from July 15th 2002 to July 15th 2003 . At the end of the Initial Term, the parties may by mutual agreement, and pursuant to a written amendment to this Agreement, extend the term thereof for an agreed period of time. The terms of this Agreement shall govern any such extension of the Initial Term, unless otherwise agreed by the parties in writing.

3. Contractor Fees. CIR shall pay Contractor $40 per participating patient for services to be performed by Contractor during the Initial Term of the Engagement. Terms and method of payment are detailed in the attached Project Plan.

4. Intellectual Property.
a) Contractor acknowledges and agrees that CIR's files and other documents, computer disks, tapes or any other electronic or physical media ("Documents") containing proprietary information of CIR (the

conteniendo información de propiedad del CIR (la" Información" Confidencial) es confidencial y es solo propiedad de CIR y se devolverá rápidamente a CIR al finalizar por cualquier razón. Las partes reconocen y están de acuerdo en que la Información Confidencial no debe incluir cualquier información o material que (a) es o se vuelve ampliamente conocido o prontamente comprobable por el público a través de ningún acto injusto del Contratista, (b) se recibe por el Contratista de una tercera parte sin agrandar una obligación debida a CIR, y la tercera parte no tenga obligación de confidencialidad alguna con CIR, o (c) se dio a conocer a Contratista o sus empleados o agentes antes de la exposición por CIR. El Contratista deberá, durante el término de este Acuerdo, y seguido de la finalización de este Acuerdo, por cualquier razón, mantener confidencial la Información Confidencial, y no deberá divulgar o permitir que se divulgue tal Información Confidencial a una tercera parte, siempre y cuando nada en este Párrafo se construya de manera tal como para prevenir que el Contratista haga más exposiciones requeridas por ley aplicable o para cumplir con la orden de una corte de jurisdicción competente o de una agencia gubernamental.

"Confidential Information") are confidential and are the sole property of CIR and shall be returned to CIR promptly upon the termination hereof for any reason. The parties acknowledge and agree that the Confidential Information shall not include any information or material which (a) is or becomes generally known or readily ascertainable by the public through no wrongful act of Contractor, (b) is received by Contractor from a third party without breaching an obligation owed to CIR, and the third party is not under any obligation of confidentiality to CIR, or (c) was known to Contractor or its employees or agents prior to disclosure by CIR. Contractor shall during the term of this Agreement and following termination of this Agreement for any reason keep any Confidential Information confidential, and shall not divulge or permit to be divulged any such Confidential Information to any third party, provided that nothing in this Paragraph shall be construed to prevent Contractor from making any disclosures required under applicable law or in order to comply with the order of a court of competent jurisdiction or of a governmental agency.

b) A CIR le pertenecerá todo el derecho, título e interés en y para cualquier propuesta, materiales u otros artículos generados o desarrollados por el Contratista bajo este Acuerdo (colectivamente "El Trabajo"). Firmando abajo, el Contratista le asigna y garantiza todo derecho, título e interés, incluyendo derecho de impresión, en y para el Trabajo de CIR.. Además, el Contratista accede a ejecutar prontamente tales acuerdos y otros instrumentos como CIR lo requiera para efectuar las provisiones de este párrafo. El Contratista también accede a cooperar de lleno con CIR y a requerir que todos sus agentes, vendedores y otros contratistas cooperen con CIR en obtener los registros de los derechos de impresión y otra protección para el Trabajo de manera que CIR lo considere apropiado.

b) CIR will own all right, title and interest in and to any proposals, materials or other items generated or developed by Contractor under this Agreement (collectively, the "Work"). By signing below, Contractor hereby makes an assignment of and warrants all right, title and interest, including copyright, in and to the Work of CIR. Furthermore, Contractor agrees to promptly execute such agreements and other instruments as requested by CIR to effect the provisions of this paragraph. Contractor also agrees to fully cooperate with CIR and to require of all its agents, vendors and other contractors to cooperate with CIR in obtaining copyright registrations and such other protection for the Work as CIR deems appropriate.

5. Ley Aplicable. Este Acuerdo deberá ser construído e interpretado conforme a las leyes internas del Estado de Illinois, sin dar efecto a cualquier conflicto de leyes o de principios de tal Estado.

5. Applicable Law. This Agreement shall be construed and interpreted pursuant to the internal laws of the State of Illinois, without giving effect to any conflicts of laws or principles of such State.

6. Acuerdo Total. Este Acuerdo contiene el Acuerdo total entre CIR y el Contratista y reemplaza cualquiera y todos los acuerdos anteriores, orales o escritos, entre las partes relacionadas con el tema. Ninguna enmienda o modificación de los términos de este Acuerdo deberá ligarse a cualquiera de ambas partes a menos que se reduzca a algo escrito y firmado por cada una de las partes de aquí en adelante.

6. Entire Agreement. This Agreement contains the entire Agreement between CIR and Contractor and supersedes any and all previous agreements, written or oral, between the parties relating to the subject matter hereof. No amendment or modification of the terms of this Agreement shall be binding upon either of the parties hereto unless reduced to writing and signed by each of the parties hereto.

ATESTIGUANDO LO ANTERIOR, el Contratista y CIR han causado que este Acuerdo sea ejecutado debidamente a partir del día y año escritos arriba.

IN WITNESS WHEREOF, Contractor and CIR have caused this Agreement to be duly executed as of the day and year first above written.

CENTRO PARA LA REHABILITACIÓN INTERNACIONAL

Por/By:

Fred Navarrete
Coordinador Regional/
Regional Network Coordinator

C I R

ASOCIACIÓN TELETON PRO REHABILITACIÓN

Por/By:

María Dolores de Nobs
Directora Ejecutiva
FUNTER

FUNTER
EL SALVADOR

ACUERDO

ESTE ACUERDO ("Acuerdo") se realiza y entra en vigencia el 15 de Julio de 2002 por y entre el CENTRO PARA LA REHABILITACIÓN INTERNACIONAL, una corporación no lucrativa de Illinois ("CIR"), y el Centro de Rehabilitación Profesional de la Fuerza Armada CERPROFA ("Contratista").

ATESTIGUA:

POR CUANTO, CIR desea involucrar al Contratista para prestar servicios a CIR.

POR CUANTO, CIR y Contratista desean entrar en este Acuerdo para establecer las condiciones del compromiso del Contratista por CIR.

POR LO TANTO, de conformidad con lo anterior y en consideración a los pactos mútuos de obligación y promesas contenidos aquí, y a otra buena y valiosa consideración, la recepción de lo cual se está reconociendo por la presente, ambas partes están de acuerdo en lo siguiente:

1. Compromiso. CIR por medio de la presente compromete al Contratista como un contratista independiente para prestar servicios a CIR en conexión con el Compromiso, como se describe a profundidad en el Plan del Proyecto adjunto. Firmando abajo, el Contratista acepta el Compromiso de CIR conforme las condiciones y términos detallados en el Plan de Proyecto adjunto aquí dentro establecido.

2. Período. El período inicial del Compromiso deberá ser de 15 de Julio de 2002 a 15 de Julio de 2003. Al final del período Inicial, ambas partes podrán, bajo mutuo acuerdo, y anuentes a una enmienda escrita de este Acuerdo, extender el período de allí en adelante a un periodo de tiempo acordado. Los términos de este acuerdo deberán gobernar cualquier dicha extensión del Período Inicial, a menos de que ambas partes estén de acuerdo por escrito.

3. Cuotas del Contratista. El CIR deberá pagar al Contratista $40 por paciente participante por los servicios realizados por el Contratista durante el Período Inicial del Acuerdo. Los términos y forma de pago se detallan en el Plan de Proyecto adjunto.

4. Propiedad Intelectual.
a) El Contratista reconoce y está de acuerdo que los archivos del CIR y otros documentos, discos de computación, cintas o cualquier otro medio de

AGREEMENT

THIS AGREEMENT ("Agreement") is entered into as of July 15th, 2002 by and between the CENTER FOR INTERNATIONAL REHABILITATION, an Illinois not for profit corporation ("CIR"), and Centro de Rehabilitación Profesional de la Fuerza Armada CERPROFA ("Contractor").

WITNESSETH:

WHEREAS, CIR desires to engage Contractor to render services to the CIR.

WHEREAS, CIR and Contractor desire to enter into this Agreement to set forth the terms of the engagement of Contractor by CIR.

NOW, THEREFORE, in reliance on the foregoing and in consideration of the mutual covenants and promises contained herein, and other good and valuable consideration, the receipt of which is hereby acknowledged, the parties agree as follows:

1. Engagement. CIR hereby engages Contractor as an independent contractor to render services to CIR in connection with the Engagement, as further described in the attached Project Plan. By signing below, Contractor hereby accepts the Engagement by CIR upon the terms and conditions detailed in the attached Project Plan and herein set forth.

2. Term. The initial term of the Engagement shall be from July 15th, 2002 to July 15th, 2003. At the end of the Initial Term, the parties may by mutual agreement, and pursuant to a written amendment to this Agreement, extend the term thereof for an agreed period of time. The terms of this Agreement shall govern any such extension of the Initial Term, unless otherwise agreed by the parties in writing.

3. Contractor Fees. CIR shall pay Contractor $40 per participating patient for services to be performed by Contractor during the Initial Term of the Engagement. Terms and method of payment are detailed in the attached Project Plan.

4. Intellectual Property.
a) Contractor acknowledges and agrees that CIR's files and other documents, computer disks, tapes or any other electronic or physical media ("Documents") containing proprietary information of CIR (the

comunicación electrónico o físico ("Documentos") conteniendo información de propiedad del CIR (la" Información" Confidencial) es confidencial y es solo propiedad de CIR y se devolverá rápidamente a CIR al finalizar por cualquier razón. Las partes reconocen y están de acuerdo en que la Información Confidencial no debe incluir cualquier información o material que (a) es o se vuelve ampliamente conocido o prontamente comprobable por el público a través de ningún acto injusto del Contratista, (b) se recibe por el Contratista de una tercera parte sin agrandar una obligación debida a CIR, y la tercera parte no tenga obligación de confidencialidad alguna con CIR, o (c) se dio a conocer a Contratista o sus empleados o agentes antes de la exposición por CIR. El Contratista deberá, durante el término de este Acuerdo, y seguido de la finalización de este Acuerdo, por cualquier razón, mantener confidencial la Información Confidencial, y no deberá divulgar o permitir que se divulgue tal Información Confidencial a una tercera parte, siempre y cuando nada en este Párrafo se construya de manera tal como para prevenir que el Contratista haga más exposiciones requeridas por ley aplicable o para cumplir con la orden de una corte de jurisdicción competente o de una agencia gubernamental.

"Confidential Information") are confidential and are the sole property of CIR and shall be returned to CIR promptly upon the termination hereof for any reason. The parties acknowledge and agree that the Confidential Information shall not include any information or material which (a) is or becomes generally known or readily ascertainable by the public through no wrongful act of Contractor, (b) is received by Contractor from a third party without breaching an obligation owed to CIR, and the third party is not under any obligation of confidentiality to CIR, or (c) was known to Contractor or its employees or agents prior to disclosure by CIR. Contractor shall during the term of this Agreement and following termination of this Agreement for any reason keep any Confidential Information confidential, and shall not divulge or permit to be divulged any such Confidential Information to any third party, provided that nothing in this Paragraph shall be construed to prevent Contractor from making any disclosures required under applicable law or in order to comply with the order of a court of competent jurisdiction or of a governmental agency.

b) A CIR le pertenecerá todo el derecho, título e interés en y para cualquier propuesta, materiales u otros artículos generados o desarrollados por el Contratista bajo este Acuerdo (colectivamente "El Trabajo"). Firmando abajo, el Contratista le asigna y garantiza todo derecho, título e interés, incluyendo derecho de impresión, en y para el Trabajo de CIR.. Además, el Contratista accede a ejecutar prontamente tales acuerdos y otros instrumentos como CIR lo requiera para efectuar las provisiones de este párrafo. El Contratista también accede a cooperar de lleno con CIR y a requerir que todos sus agentes, vendedores y otros contratistas cooperen con CIR en obtener los registros de los derechos de impresión y otra protección para el Trabajo de manera que CIR lo considere apropiado.

b) CIR will own all right, title and interest in and to any proposals, materials or other items generated or developed by Contractor under this Agreement (collectively, the "Work"). By signing below, Contractor hereby makes an assignment of and warrants all right, title and interest, including copyright, in and to the Work of CIR. Furthermore, Contractor agrees to promptly execute such agreements and other instruments as requested by CIR to effect the provisions of this paragraph. Contractor also agrees to fully cooperate with CIR and to require of all its agents, vendors and other contractors to cooperate with CIR in obtaining copyright registrations and such other protection for the Work as CIR deems appropriate.

5. Ley Aplicable. Este Acuerdo deberá ser construído e interpretado conforme a las leyes internas del Estado de Illinois, sin dar efecto a cualquier conflicto de leyes o de principios de tal Estado.

5. Applicable Law. This Agreement shall be construed and interpreted pursuant to the internal laws of the State of Illinois, without giving effect to any conflicts of laws or principles of such State.

6. Acuerdo Total. Este Acuerdo contiene el Acuerdo total entre CIR y el Contratista y reemplaza cualquiera y todos los acuerdos anteriores, orales o escritos, entre las partes relacionadas con el tema. Ninguna enmienda o modificación de los términos de este Acuerdo deberá ligarse a cualquiera de ambas partes a menos que se reduzca a algo escrito y firmado

6. Entire Agreement. This Agreement contains the entire Agreement between CIR and Contractor and supersedes any and all previous agreements, written or oral, between the parties relating to the subject matter hereof. No amendment or modification of the terms of this Agreement shall be binding upon either of the parties hereto unless reduced to writing and signed by each of the parties hereto.

por cada una de las partes de aquí en adelante.

ATESTIGUANDO LO ANTERIOR, el Contratista y CIR han causado que este Acuerdo sea ejecutado debidamente a partir del día y año escritos arriba.

IN WITNESS WHEREOF, Contractor and CIR have caused this Agreement to be duly executed as of the day and year first above written.

CENTRO PARA LA REHABILITACIÓN INTERNACIONAL

Por/By:

Fred Navarrete
Coordinador Regional/
Regional Network Coordinator

Centro de Rehabilitación Profesional de la Fuerza Armada

Por/By:

DIRECCION

José Oquilio Marroquín Avelar
Director
CERPROFA

Descripción del Programa de Medición de Resultados

Introducción
El propósito de este estudio de investigación es desarrollar medidas de resultados que incluyan información acerca de las características y acerca del dispositivo protésico que los pacientes que participaran en el estudio están utilizando actualmente. Esta medición de resultados medirá también el nivel de satisfacción, funcionalidad y calidad con los dispositivos protésicos que reciban.
Cada Centro designará un Coordinador de Investigación que tendrá bajo su responsabilidad la coordinación, recopilación de información y la implementación del Programa (Ver pagina 4 en donde se describen las responsabilidades del Coordinador de investigación)

Participantes Elegibles
Adultos de 18 años o mayores
Clientes recibiendo una prótesis *nueva* para miembro inferior

Adicionalmente, los amputados pueden tener cualquier etiología (trauma vs. enfermedad como diabetes), y pueden tener ya sea una amputación antigua o nueva.

Consentimiento Informado
El fin del estudio es la *investigación* y por consiguiente es importante enfatizar el consentimiento del paciente previo a iniciar la recolección de la información.

Incluido en el estudio existe un formulario de consentimiento que describe el propósito, riesgos y beneficios.
Antes de recolectar cualquier dato, el potencial participante debe comprender este estudio y debe respondérsele sus preguntas a cabalidad, y obtener su firma como evidencia de que acepta participar. Una copia de este consentimiento debe dársele al cliente (una copia sin firmar está bien) y el consentimiento original firmado se guardará para posteriormente enviarlo a CIR y deberá guardar una copia del consentimiento firmado en el expediente del paciente.

Este proyecto de Investigación ha sido aprobado por el Consejo de Revisión Institucional de la Universidad Northwestern (IRB). Puede ver su estampilla en la parte inferior de la Hoja de Consentimiento. De nuevo, si tiene cualquier pregunta, por favor, contáctenos a CIR para mayor clarificación.

Hoja de Rastreo
En su paquete está incluida una hoja de rastreo que se utilizará para documentar a los participantes en la investigación. A cada participante se le asignará un número único de identificación del estudio, que se utilizará en todos los formularios. Es muy importante el mantener la confidencialidad del paciente en todos los documentos.
NOTA: La hoja de rastreo es el único registro con el nombre del participante y su número de identificación y esta debe ser guardada en una gaveta o archivo bajo llave.

Todos los demás documentos relacionados con el estudio deberán tener solo el Número de Identificación del estudio

Outcomes Measures Program Description

Introduction
The purpose of this research is to develop the outcomes measures that includes information about the characteristics and the protesic device that the patients involved in the study are using. This measurement will also monitor the level of satisfaction, functionality and quality of the prosthesic devices they receive.
Each Center will name a Research Coordinator who will be responsible for the coordination, data collection and the implementation of the Program (See page 4, Description of Research Coordinator duties).

Eligible Participants
Adults 18 years or older
Clients receiving a *new* lower extremity prosthesis

Additionally, amputees can have any etiology (trauma vs. disease such as diabetes), and can have either a new or an old amputation.

Informed Consent
The goal of the study is the *research* and thus it is important to emphasize in the patient´s consent before collecting the information.

There is a consent form included in the study, which describes the purpose, risks and benefits.
Before collecting any data, the potential participant must understand the study, their questions must be sufficiently answered, and their signature must be obtained as evidence of their agreement to participate. A copy of the Consent Form should be given to the client (an unsigned copy is fine) and the original signed Consent Form will be retained for later delivery to CIR and a copy should be filed with the patients records.

This research project has been approved by Northwestern University's Institutional Review Board (IRB). Notice their stamp at the bottom of the Consent Form. Again, if you have any questions, please contact us at CIR for further clarification.

Tracking Sheet
Included in your packet is a tracking sheet to be used for documenting research participants. Each participant is assigned a unique study ID number that is to be used on all forms. Maintaining a participant's confidentiality on all documents is very important.
NOTE: the tracking sheet is the only record with both the participant's name and their study ID number and needs to be kept in a locked drawer.

All the documents related with this study has to have the Identification Number of the study (number ID). These too

(numero ID). Estos también deben guardarse en un archivo o gabinete bajo llave. También deberá escribir el numero de ID de estudio en todas las hojas y respectivos fólders. El colocar un punto rojo o alguna otra marca en el archivo clínico de un paciente puede ayudar también para alertar al personal de que el paciente está participando en esta investigación y que va a necesitar que se llenen ciertos formularios durante su consulta.

should be kept in a locked file cabinet. You have to write the ID number of the study in all the sheets and files. Putting a red dot or some other mark on a participant's clinic file may also be helpful as a means of alerting staff that the patient is participating in this research and may need to have certain forms completed during a visit.

Formularios para Recolección de Datos

Data Collection Forms

Registro y Demografía
Este formulario contiene una hoja para recolectar información acerca de la ocupación del cliente, su nivel educativo, situación de vivienda actual e historia de salud general.

Registration and Demographics
There is one page to this form for collecting information about the client's employment status, educational level, current living situation, and general health history.

La información obtenida en estas dos hojas se recabará en el momento de la primera cita del cliente a la clínica.

The information gathered on this form is obtained at the time of the client's first visit to the clinic.

Estado Funcional de la Extremidad Inferior
Este es un formulario de una hoja que establece la habilidad actual del cliente para realizar una variedad de actividades con el miembro inferior.

Lower Extremity Functional Status
This is a one-page form that establishes a client's current ability to perform a variety of lower extremity activities.

Este formulario debe completarse por el cliente en el momento de su primera consulta a la clínica y de nuevo a los 30 días en su consulta de seguimiento. Se recomienda que a los pacientes se les programe una cita de seguimiento a los 30 días después de entregar la prótesis. Datos funcionales se recabarán por última vez en una cita a los 3 – 6 meses.

This form is to be completed by the client at the time of their first visit to the clinic and again at a 30-day follow-up visit. It is advisable to program a follow-up appointment 30 days after they delivering the prosthesis to the patients. Functional data will be collected one final time at a 3 - 6 month follow-up visit.

Calidad de Vida Relacionada con la Salud
Este formulario de dos hojas es una medida de la calidad de vida actual del cliente y de su sensación de bienestar. Así como el del ESTADO FUNCIONAL, este formulario deberá ser llenado en la primera cita del paciente y de nuevo en su cita de seguimiento a los 30 días. Recolectaremos estos datos sobre calidad de vida una última vez a los 3 - 6 meses en la cita de seguimiento.

Health Related Quality Of Life
This two-page form is a measure of a client's current quality of life and sense of well being. As with FUNCTIONAL STATUS, this form is to be filled out at the time of the client's first visit to the clinic and again at the 30-day follow-up visit. We will collect this quality of life data one final time at a 3 - 6 month follow-up visit.

Evaluación Protésica Inicial del Miembro Inferior
El Coordinador de investigación en coordinación con el protesista debe completar este formulario de dos hojas en la primera cita del paciente a la clínica. Este formulario establece la historia del paciente y su necesidad de una prótesis basada en niveles funcionales, estado físico, y metas de tratamiento.

Prosthesis Initial Evaluation of the Inferior Member
The Research Coordination with the client's prosthetist should complete this two-page form at the time of the client's initial visit to the clinic. This form establishes the client's health history and need for a device, based on functional levels, physical status, and treatment goals.

Nota de Evolución Protésica del Miembro Inferior
El Coordinador de investigación en coordinación con el protesista deberá llenar este formulario cada vez que el cliente tenga citas a la clínica hasta que se le entregue la prótesis o en la primera cita de seguimiento, cualquiera que se dé de último. Para propósitos de la investigación, el período de tiempo desde la primera cita hasta la entrega de la prótesis o hasta la cita de seguimiento se denominará el episodio de atención del cliente.

Lower Extremity Prosthetics Progress Note
The Research Coordinator with the client's prosthetist is to complete this form every time the client visits the clinic until the time of device delivery or the first routine follow-up visit, whichever is the later. For research purposes, the time period from initial visit to device delivery or follow-up will be considered the client's episode of care.

Este formulario de dos hojas proporciona una manera de rastrear el estado funcional de un cliente a través del

This two-page form provides a way of tracking a client's functional status over the course of an episode of care. The

transcurso de un episodio de atención. La NOTA DE EVOLUCIÓN, en conjunto con los otros elementos de datos como la demografía, historia y estado funcional y calidad de vida, nos permitirá evaluar las modalidades de tratamiento y mejorías funcionales para un episodio de atención en particular.

Evaluación de Seguimiento de los Servicios Clínicos
A los clientes se les programarán citas de seguimiento a los 30 días y a los 3 - 6 meses luego de la entrega de su prótesis. Este formulario de dos hojas proporciona una manera de rastrear la satisfacción del paciente con su dispositivo y de los servicios que recibieron en la clínica.

Alcance de Trabajo del Coordinador de Investigación

El Coordinador de Investigación es el responsable de recopilar la información, controlar la calidad de la misma, y velar por que los documentos sean mantenidos en confidencialidad. Además, el Coordinador de Investigación será el contacto entre el Centro y CIR para resolver cualquier duda o consulta.

Responsabilidades especificas:

- Selección de los pacientes a participar de acuerdo a los requerimientos establecidos
- Asegurarse que el paciente comprenda el contenido de la Hoja de Consentimiento, el propósito del estudio y los procedimientos
- Obtener la firma del paciente en la Hoja de Consentimiento previo al inicio de cualquier actividad relacionada con el estudio.
- Firmar como Coordinador de investigación en la Hoja de Consentimiento
- Asignar un numero de ID de estudio (en el caso de CERPROFA el prefijo 1- presidirá al numero de estudio, en el caso de FUNTER será el prefijo 2- el que presidirá al numero de estudio)
- Mantener toda información de los pacientes participando en el estudio en forma confidencial.
- Mantener bajo llave toda la documentación relacionada al estudio
- Identificar y completar los formularios correspondientes durante cada visita del paciente e ingresara la información en la base de datos: http://www.cirnetwork.org/network/index.jsp
- Controlar la calidad y exactitud de la información

Administración y Monitoreo del Programa

Monitoreo:
Personal de CIR podrá en cualquier momento que estime conveniente, convocar a reunión con el objeto de monitorear y evaluar el avance que el Programa está teniendo en cada una de las instituciones participantes.

Reintegro de fondos:
El 50% ($20.00 por cada paciente participante) de los fondos serán pagados a los centros al completar los siguientes formularios:

PROGRESS NOTE, in combination with the other data elements such as demographics, health history, and client reported functional status and quality of life, will enable us to evaluate treatment modalities and functional gain for a particular episode of care.

Follow-Up Evaluation Of Clinic Services
Clients will be scheduled for follow-up visits at 30 days and 3 - 6 months after delivery of their prosthesis.
This two-page form provides a means of tracking client satisfaction with their device and the services they received at the clinic.

Research Coordinator Scope of Work

The Research Coordinator will be responsible to compile the information, control the quality of it, and make sure that the documents are been kept in confidentiality. Besides, the Research Coordinator will be the contact person betwee the Center and CIR to solve any doubt or questions.

Specific Responsabilities:

- Selection of the patients that will be included according the established requirements.
- Make sure the patient understands the content of the Consent Form, the proposal of the study, and the procedures
- Obtain the patient's signature in the Consent Form before the beginning of any activity related with the study.
- Sign the Consent Form as a Research Coordinator
- Asign an ID study number (for CERPROFA the prefix 1- will preside the study number, for FUNTER the prefix will be 2-)
- Keep all the information of the patients that are participating in the study in a confidential way.
- Keep lock all the documentation related to the study
- Identify and complete all the forms corresponding to each appointment of the patient and type in the data into the database: http://www.cirnetwork.org/network/index.jsp
- Information's quatlity control and accuracy.

Program Administration and Monitoring

Monitoring:
CIR's personnel could call to a meeting, any time they consider convenient, with the objective of evaluate and monitor the Program advances in each one of the participant institutions.

Reimbursements:
The 50% ($20.00 for each participant patient) of the funds will be paid at the centers when the following forms are completed:

- Registro y Demografía
- Estado Funcional de la Extremidad Inferior
- Calidad de Vida Relacionada con la Salud
- Evaluación Inicial del Paciente

El 50% remanente ($20.00 por cada paciente participante) serán pagados a los centros a los 90 días, una vez completados los siguientes formularios:

- Estado Funcional de la Extremidad Inferior
- Calidad de Vida Relacionada con la Salud
- Evaluación de Seguimiento de los Servicios Clínicos ofrecidos por la Clínica
- Nota de Evolución Protésica del Miembro Inferior

De existir visitas adicionales se deberán completar los formularios correspondientes (sin reembolso alguno). Esto hace un total de $40.00 por cada paciente participante cuyos formularios descritos anteriormente han sido completados y debidamente digitados en la base de datos: http://cirnetwork.org/network/index.jsp

Login: (a ser asignado)
Password: (a ser asignado)

El reporte con el número de pacientes por mes será enviado a la oficina de CIR en San Salvador para tramitar el reintegro la última semana de cada mes. Este reporte deberá contener el número de identificación (ID) del participante.

- Registration and Demographics
- Lower Extremity Functional Status
- Health Related Quality Of Life
- Prosthesis Initial Evaluation of the Inferior Member

The 50% remaining ($20.00 for each patient) will be paid at the centers in 90 days, once the following forms are completed:

- Lower Extremity Functional Status
- Health Related Quality Of Life
- Follow-Up Evaluation Of Clinic Services
- Lower Extremity Prosthetics Progress Note

If there are aditional visits, the corresponding forms have to be completed (without reimburse). This makes a total of $40.00 for each patient, for which the previously described forms had been completed and entered into the database: http://cirnetwork.org/network/index.jsp

Login: (to be assigned)
Password: (to be assigned)

The report with the number of patients per month will be sent to the CIR's office in San Salvador to arrange the reimbursements the last week of the month. This report will contain the participants ID number.